CALIFORNIA
OIL WORLD
DEC 1944

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NOVEMBER 1944

Unretouched photo of cutter removed from Sievers Reamer below 15,000 feet. Compare this with the new cutter shown at left and note evenness of wear.

SIEVERS REAMERS were run from top to bottom on Standard's K.C.L. 20-13, world record well—and this hole was never more than 3% off vertical. *Sievers Reamers' wider wall contact gives full hole stabilization.*

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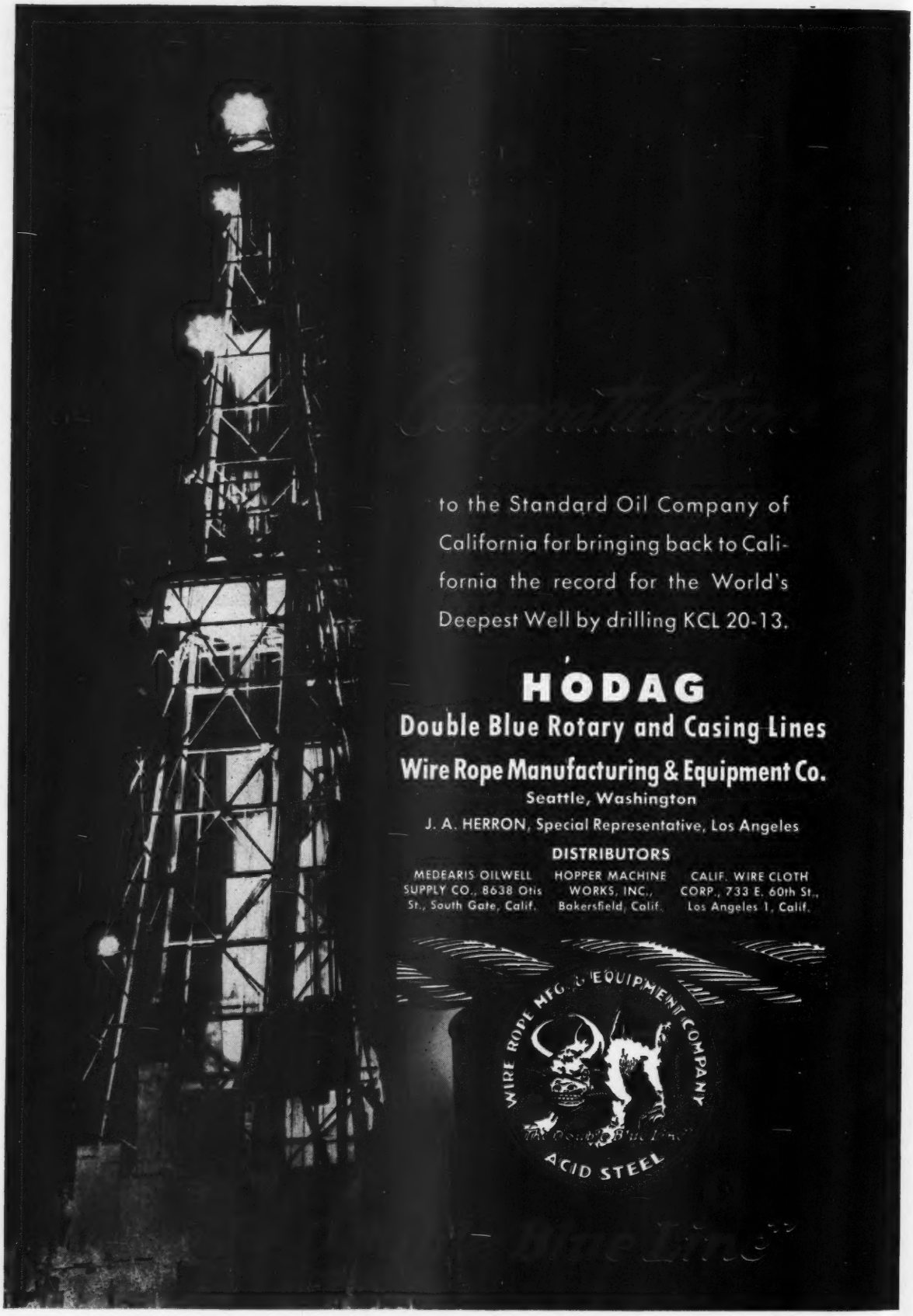
to the Standard Oil Company of California for bringing back to California the record for the World's Deepest Well by drilling KCL 20-13.
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CALIFORNIA
OIL WORLD

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CALIFORNIA OIL NEWS COVERAGE

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KINZIE MILLER—Vice President

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November 15th, 1944
Telephone Number TUcker 2571

Carrington Kung

Even with the Presidential elections upon them, oil men and the U. S. State Department are finding time to look nervously in the direction of the Middle East, as ominous reports of international disunity continue to trickle in from abroad.

If the predictions of some foreign editors come true, the situation that appears to be developing over Russia's belated bid for oil concessions in northern Iran will present the postwar peace delegations with a dangerous problem.

Tales of "bitter disappointment" on the part of American and British companies, whose year-long negotiations for concessions in southeastern and central Iran were called off by the Iranian Government when Soviet Russia suddenly entered the picture, now have been augmented by the report that the Iraq Government is preparing to sell out to the Soviets.

With Iran allegedly frightened out of doing business with her Anglo-American clients and Iraq allegedly courting the Russians, students of foreign affairs are becoming increasingly uneasy about the fate of the recent Dumbarton Oaks proposal and the agreement between the U. S., Great Britain, Russia and China to "maintain international peace and security; and to that end to take effective measures for the preservation and removal of threats to the peace and the suppression of acts of aggression. . . ."

Already, it is pointed out, there has been rioting in the streets of Teheran over the failure of Russia to obtain the Iranian concessions. The resignation of Mohammed Saed and his replacement with a "man with whom Russia can co-operate" has been predicted by William Philip Simms, internationally known foreign editor of the Scripps-Howard papers.

These dark clouds over our relations with our ally, Russia, are in no way dissipated by the report the Russians did not intend to pay royalties to the small country of Iran for the concessions they were seeking.

Socony-Vacuum and Sinclair are the American companies hurt by the collapse of their negotiations in Iran, with the British-owned Shell company similarly affected. If there should be any truth to the report Iraq is getting ready to "sell out" to the Russians, the vast interests of Britain's Iraq Petroleum Co. would be involved and a clash between England and Russia would appear inevitable.

Charges that power politics already are being played by Russia are serious enough, at a time when the "Big Four" ostensibly are working out a lasting peace for the world. The gloomy picture is not improved by the recent report that Russia has so far failed to allow U. S. and British petroleum companies to examine what is left of their properties in the Russian-occupied Ploesti fields in Rumania.

While it was pointed out the Soviet Government has not specifically refused to let experts from the Standard Oil Co. of New Jersey and the British Shell Co. to enter the Ploesti oil field, the State Department is taking the precaution of issuing no passports for the oil men until word is received from Moscow of a definite policy with regard to the matter.

Before the Russian "enigma" presented itself to worry the oil industry, the chances of the pending Anglo-American petroleum agreement appeared brighter than in many weeks. But the troubled situation in the Middle East has greatly lessened the importance of the highly controversial (but comparatively harmless) international treaty.

The Petroleum Industry War Council finally voted down a resolution denouncing the agreement—largely in response to an appeal from Petroleum Administrator Ickes, who asked PIWC to make specific suggestions for changes in the language in which the offending document was written.

This put the council and its Committee on National Oil Policy rather on the spot, and the October 25 meeting broke up with an agreement the committee would submit a report at the December meeting recommending changes designed to meet the industry's objections to the pact. Not everybody was satisfied; there was some talk about having been forced to comply with Ickes' request and there was further

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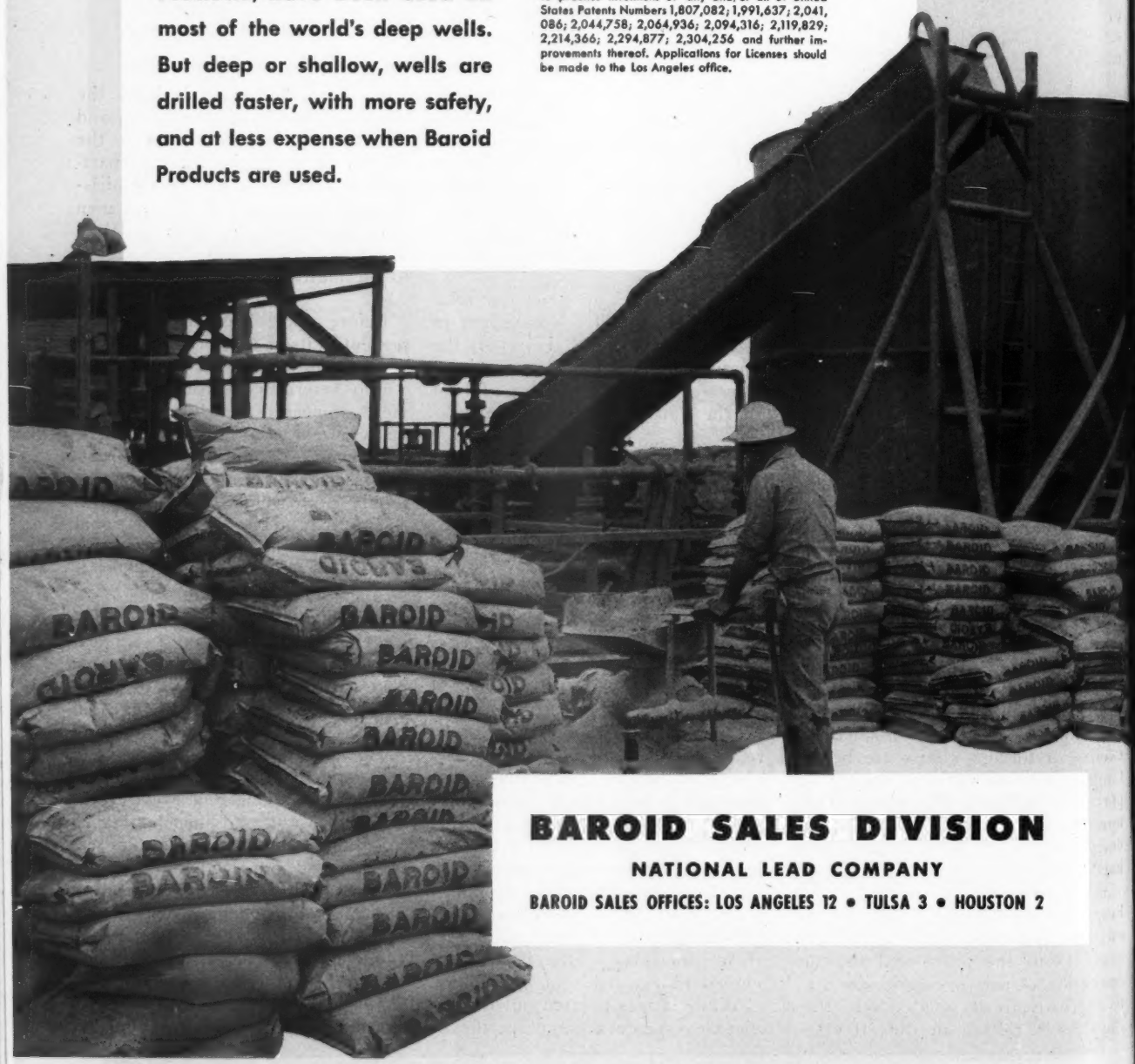

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grumbling about the imminence of the elections and the fact the PIWC could not really blast the agreement without laying itself open to charges that it was opposing an administration proposal.

Criticism of the treaty was not lacking. George A. Hill, Jr., president of Houston Oil Co., and Ralph T. Zook, president of the Independent Petroleum Association of America, proposed a substitute resolution asking that the Senate refrain from ratifying the agreement but this was voted down. Another militant opponent of the treaty, J. Howard Pew, president of the Sun Oil Co., circularized a 10-page denunciation of the agreement—which he described as a "deliberate attempt" to regiment the industry.

The PIWC's partly-reluctant decision to try to work out a compromise which might result in the drawing up of a new agreement with the British was a victory for proponents of the pact. But the pact itself seems, at this writing, completely overshadowed by the Middle Eastern situation. Involved in an altercation with Russia over future international oil policies, neither the U. S. nor Great Britain can take much comfort in the progress of the agreement that was worked out between them during weeks of patient negotiation last summer.

By the time this issue of CALIFORNIA OIL WORLD hits the street, the industry will have some idea of whither it is drifting—with regard to National Administrations. Right now, the ballots have not been counted and Washington still is in the dark as to whether Petroleum Administrator Ickes is to be "housecleaned" out of his job.

Washington correspondents have long since chosen sides and made their bets—but the bets are not as extravagant as in former elections. On election eve, it looks to this reporter as though the oil industry might as well resign itself to plodding along under the same Washington management. . . .

Well, forgetting politics and the lively pre-election antics of "Honest Harold" Ickes, the industry might have fared worse than it has during the troubled years of National emergency and actual war. If, by chance, Mr. Ickes should lose his job on Nov. 7, future historians will find a few kind words to say for the manner in which the PAW discharged its duties to the oil industry. The industry, too, should be complimented on its willingness to cooperate with a man it once considered as its foe.

Now, what about this sudden interest in the "tidelands"?

Dormant for nearly six years—except for an occasional false alarm or two—the issue of "who owns the tidelands" seems ready for revival. Opinions differ on how, or when, the matter will come up. Some people are watching the "Fortas faction" of the Interior Department for a clue; others believe the Department of Justice is getting ready for a test case.

No one who sat through the long and tedious hearings on the Nye and Hobbs bills in 1939 could doubt the intentions of certain worthy officials in the Justice Department, the Interior Department and the Navy Department, where the question of State vs. Federal ownership of billions of dollars worth of undersea oil deposits was involved. Although the Federal agencies finally dropped the fight to establish title in the lands in the U. S. Government, there has always been an unwritten agreement that some day the issue would be disinterred.

There has been talk of an Executive Order from the White House, conferring upon the Secretary of the Interior the privilege of issuing permits to drill on the disputed territory (this can be forgotten if the elections result in a change of administration). There has also been the suggestion that Ickes might grant an application for a lease (despite a 1937 ruling by the Interior Department that it had no jurisdiction over tidelands properties) in order to get the matter into the courts for an eventual decision by the United States Supreme Court as to whether the State or the Federal Government owns the lands. . . . There could be another bill authorizing the Justice Department to establish title to the tidelands in the U. S.

Officials within the interested agencies do not see eye-to-eye on the matter. Generally speaking, the men who are making a career of their government jobs are more inclined to favor a show-down on the ownership question.

Since California once was in the uncomfortable position of being singled out for an attack on her submerged oil holdings, the state is naturally interested in seeing that the fight is not resumed. But, if title to California's tidal oil lands should be established in the U. S., a precedent would exist for an attack on similar lands up and down both coasts. The Port Authorities from every coastal state in the country were quick to see this danger and to side with California in her fight against the Nye bill; Texas—whose school system is supported by the earnings of wells drilled below the low-water mark along her coast—is another ally in any battle that may be brewing.

So far, there has been no indication that any member of Congress is considering introducing new legislation to determine ownership of the submerged lands. The Navy Department—despite its recent deal to take over Standard Oil Co. of California's Elk Hills property—has said nothing about its old dreams of taking the California tidelands as an addition to its Naval Petroleum Reserves. . . . If Secretary Ickes is getting ready to reopen the issue he has not yet showed his hand.

Nevertheless, there is a lively whispering campaign going on in Washington and the oil writers are bothered and baffled. It is possible that pre-election gossip may have something to do with the rumors that keep cropping up and that interest in the tidelands may evaporate after Nov. 7. It is also possible, of course, that any dire plot to put over a Federal "oil grab" may be awaiting the outcome of the elections.

While nobody is quite certain of where the expected attack will originate, most signs point to the Department of Justice. This worthy agency is notoriously interested in seeing that the so-called "monopolistic" industries are kept in their place and has made life uncomfortable for the petroleum industry over a period of time.

A strong plug for postwar expan-

(Continued on Page 56)

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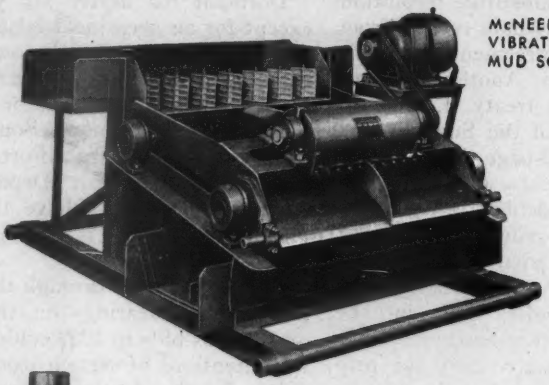

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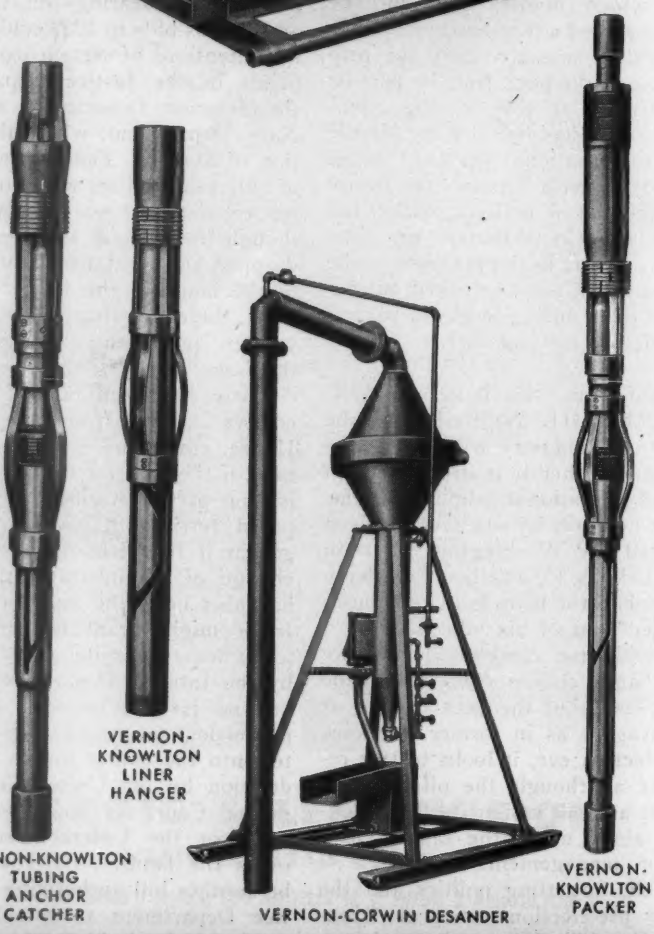

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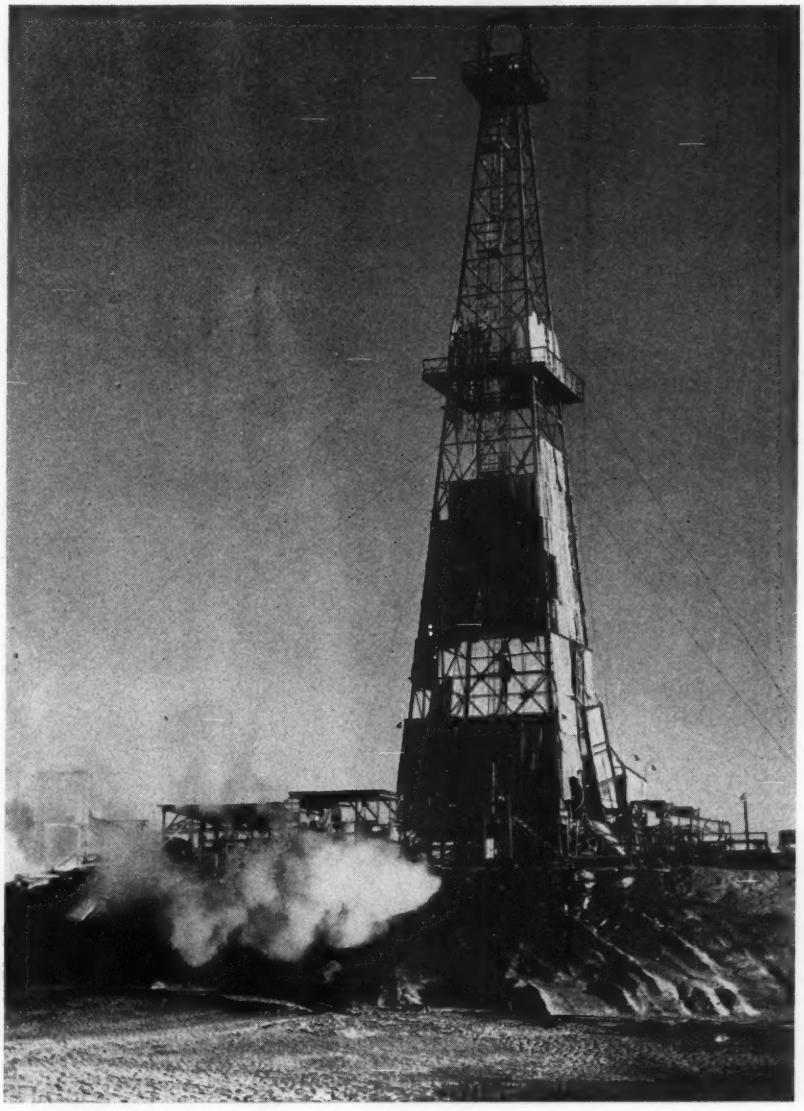
The World's First Three Mile Well

The world's record for drilling depth has returned to California. On October 15th, Standard Oil Company of California's Well KCL 20-13 in the South Coles Levee Field passed the previous record of 15,279 ft. made by Phillips Petroleum Company in Pecos County, West Texas, earlier this year; it had previously passed on September 29th the California depth record of 15,004 ft. made by Continental Oil Co. at Wasco in 1938. At the time of going to press the well is still drilling at 15,845 ft. The intention of the company is to continue drilling until oil is struck or until the equipment in use cannot be safely employed for greater depth. It is believed that the maximum depth that can be reached with safety under existing conditions should be approximately 16,500 feet.

Little if any of the equipment (except expendable items such as bits, etc.) is new; and much of it is not of the most recent design. Nor are all the kinds employed of the heaviest and largest types. In fact, an outstanding feature as to equipment is its regularity as to type and size with other so-called heavy steam outfits being operated by Standard. The well was spudded in on July 31, 1944, and the equipment assembled was what was available at that time. It was, and is, good equipment and has provided safe operation. It has proved its ability for performance when properly applied to the conditions encountered in drilling this deep hole.

A vital factor in reaching the great depth of this well has been the skill and experience of the crew and the the co-ordination between the crew, the technical staff and the management. The bore is in excellent shape and no serious fishing jobs have been encountered. In a tribute to the efficiency and team work of the crew, Al Tietze, general superintendent for Standard's Northern Division under whose supervision the well is being drilled, has said "The crew is a good one, well qualified to carry on drilling operations at any depth. Their individual judgment and their cooperation with the drilling superintendent and the foremen have been great factors in getting down this far with as little trouble as has been experienced."



Standard KCL 20-13

KCL 20-13 is an exploratory well and is a part of Standard's intensive program to endeavor to find new crude production for war needs. It is located in Section 5, Township 31 south, Range 25 east, and is approximately three-quarters of a mile to the west of the productive

These Patterson-Ballagh Protectors good for 100,000 feet of hole

Five Texas wells, each more than 11,000 feet deep, were drilled with the Protectors shown in this photo. The Protectors are still in prime condition and show no loss of diameter. The drillers estimate that these Protectors are good for at least five or six more wells—a total of more than 100,000 feet of hole. That's a lot of hole—and a lot of service from one string of Protectors. Only the toughest rubber can render such service. Patterson-Ballagh Protectors are now being made of PBX synthetic rubber. This rubber is of a specially developed formula designed specifically for Patterson-Ballagh products. Reports from the field indicate its rugged qualities—its resistance to oil and weather.

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limits of the South Coles Levee Field. The elevation at this well is 488 ft. above sea level and from the well one may look over Buena Vista Lake, the lowest spot in Kern County.

The wells in this general area produce from the Stevens Zone of Miocene Age at approximately 9000 ft., but below this zone geologists are seeking other prospective oil zones such as the Vedder sand which is productive at much shallower depths along the east side of the San Joaquin Valley. Should the well strike production in a lower horizon the discovery would be an important development that should lead to a considerable addition to California's oil reserve.

Rig Equipment

The derrick is of steel, 136 ft. high with 30-ft. base and extended legs. It is unreinforced and has a rated capacity of 799,600 pounds. The substructure is 8′-3″ high and while it is of manufacturer's design it incorporates Standard Oil Company modifications.

The crown block has a 360 ton dead load capacity with seven 48-in. sheaves grooved for 1¼-in. wire rope. It is constructed to meet the need for simple, continuous, over-and-over reeving, using large diameter sheeves. The travelling block is a 121 in. type with six 48-in. sheeves, grooved for 1¼-in. wire line and having a rated dead load capacity of 500 tons. The casing lines used have been 1¼ in. diameter, A.P.I. grade "J", 2750 ft. long.

A 300-ton triplex hook with duplex body is used for drilling on the links which are of the weldless type 2¾″ x 108″. Three elevators are in the rig, two being 3½-in. for I. F. drill pipe and the other 3½-in. for slim hole drill pipe. The latter is used with lifting plugs.

The swivel being used has a rated rotating capacity of 150 tons at 100 r.p.m. This swivel is equipped with swivel bail adaptor for drilling on the links. The kelly is a 4½-in square type with 38-ft. working space and is provided with a 3-in. stopcock. Two 2½-in rubber hose, 55 ft. in length, are hung on separate stand pipes with one hose being for use with a pool boy swivel or as a spare. Both hoses have swing joints on the swivel end.

A 7′-6″ high combination base supports the drawworks and hoisting engine. The drawworks has 54-in. watercooled brake rims and 10-in. grooved drum shaft. When

Officials and Day Tour at Standard of California's Record Depth Well, KCL 20-13.
Left to right: Allen Snider, Rotary Helper; D. Q. Steakley, Relief Driller; F. A. Heitmeyer, Assistant Drilling Superintendent; Al Tietze, General Superintendent, Northern District, Producing Department; C. L. Brewster, Superintendent of Drilling; W. M. Quinn, Drilling Foreman; Fred B. Snyder, Driller; G. O. Werling, Welder, (stooping); D. E. Behymer, Rotary Helper; Arthur Dix, Fireman.

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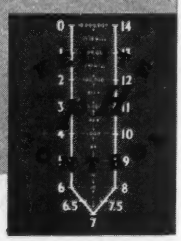

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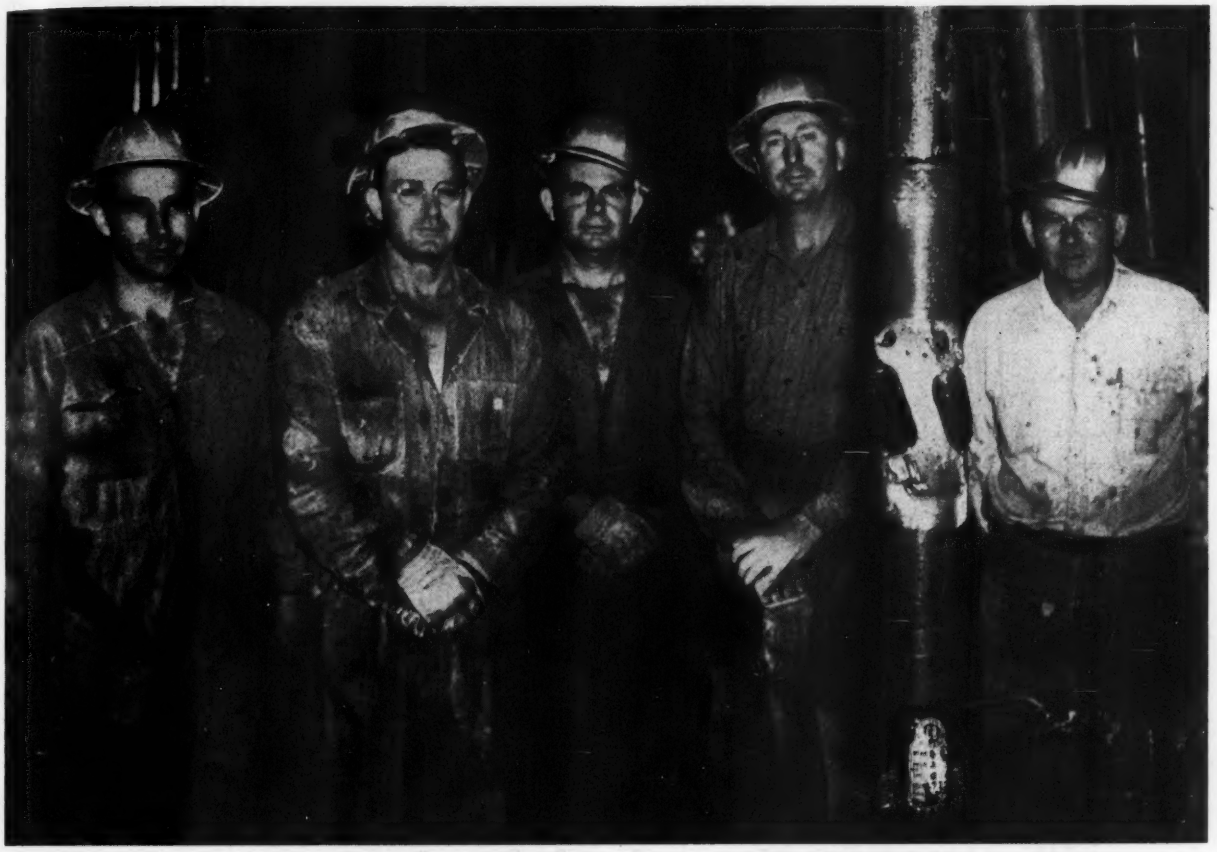

The Night Tour: Left to right—Jack Erbe, F. B. Wilson, J. W. Mansfield, R. E. Garrould, J. E. Dorsey, Driller. Shown with a Crum Bit as it came out of the hole after breaking the record.

originally purchased this machine was equipped with sprockets for A.P.I. No. 4 chain but was later converted into dual 3⅛-in. pitch sprockets and chain throughout by the Standard Oil Company. All chains are drip lubricated except the engine drive chain which is oil bath. Other equipment on the drawworks include an automatic cathead, catline grip, rope guards and a wire line turn back roller on the driller's side. A 36-in. single hydromatic brake is mounted on each end of the drawworks drum shaft.

Hoisting is done with a 14" x 14" horizontal twin steam engine. This engine is equipped with a 4-in. throttle valve, 4-in quick shut-off valve and steam reverse kicker.

A 5-ft. calf wheel is driven by a

Coming out of the hole with slim hole drill pipe. A Web Wilson Elevator is being set around the pipe.

Photographs courtesy Texas Iron Works.

HYCAR does the job where others fail!

HERE'S one example. A southwestern operator was having trouble maintaining an efficient pack-off between tubing and oil string. When he removed the packer from the well he found that the so-called oil-resistant packer rings had completely disintegrated. Then Hycar was specified—and that was the end of trouble.

Superb performance of this oil resistant rubber is the reason why Hycar was selected for use in Texas Iron Works' JSA Hook Wall Control Head Packer shown in the illustration. Those six packer rings will stay resilient and resistant to oil and gas regardless of how many times the packer needs to be set, unset and reset during the life of the well. Nor will they ever stick to the casing wall, or swell and bind in place.

But oil resistance is only one of Hycar's many unusual properties. Look at the list in the box to the right. It almost seems that Hycar was specially developed for oil field applications. Gate packers in mud line valves, casing head seals, gaskets and seals of all kinds, drilling and suction hose—these are just a few of Hycar's many oil industry uses.

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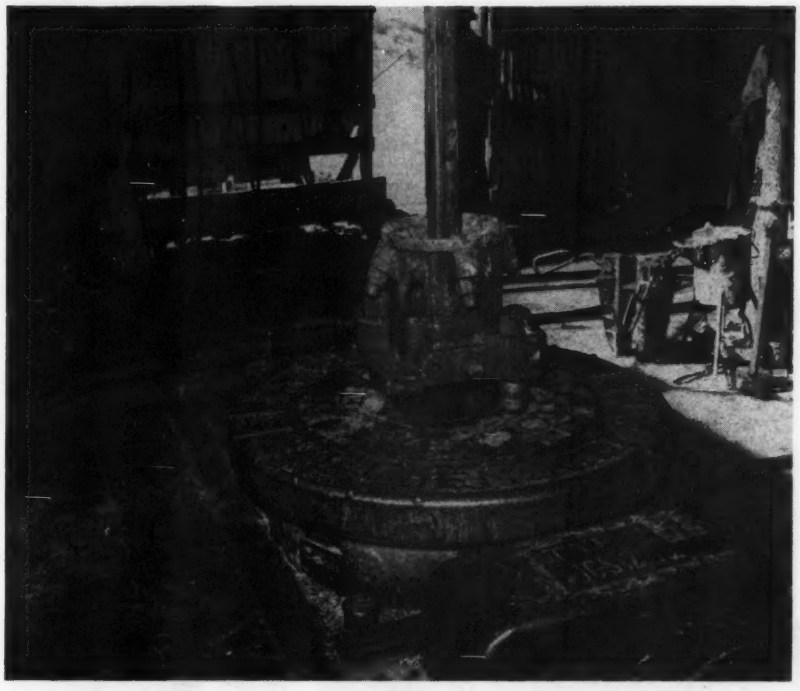
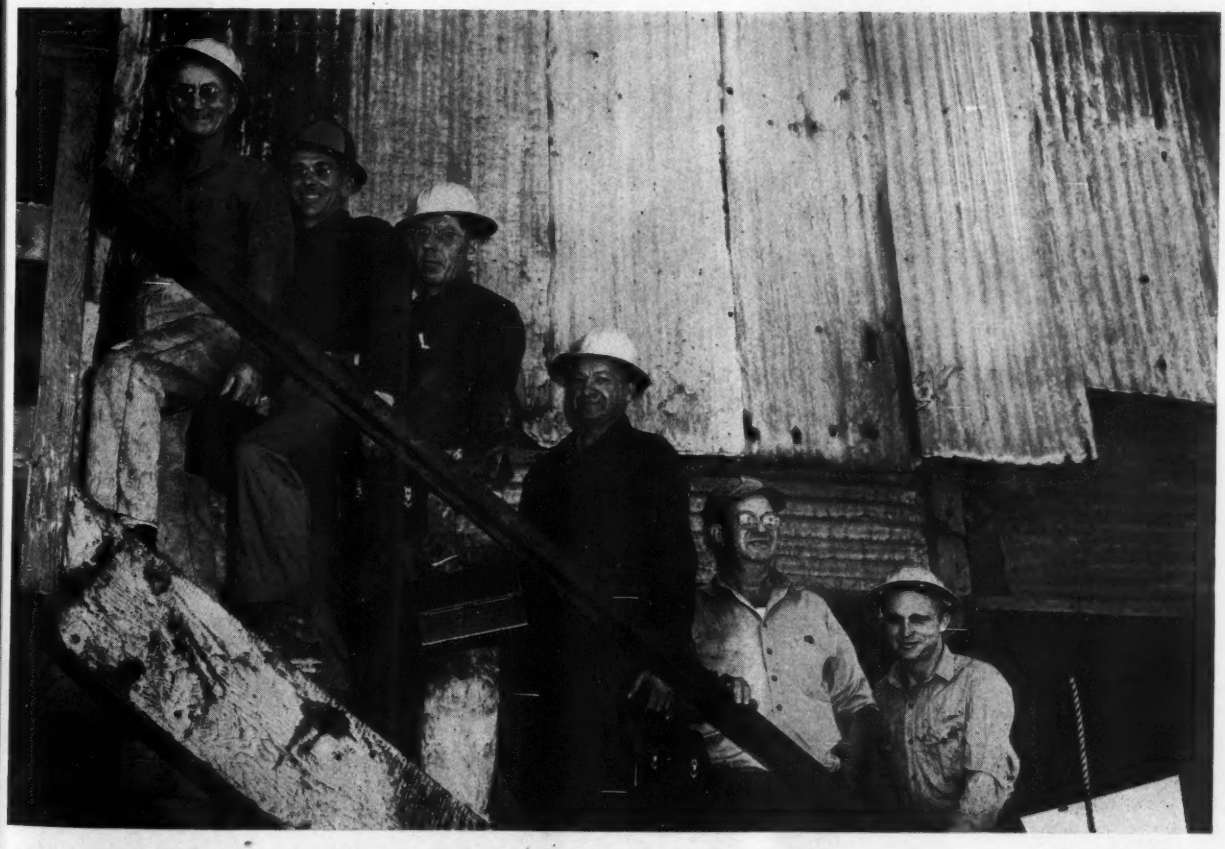
12" x 12" single cylinder steam engine and is used for convenience in handling casing. This calf wheel is for dead ending only and not for standby. The sand reel is powered by the same engine as that used for the calf wheel.

Power for driving the rotary machine is provided through an underfloor drive by a 12" x 12" horizontal twin steam engine located below the derrick floor. This engine is also equipped with a 4-in. throttle valve and a 4-in. quick shut-off valve for safety shut-off.

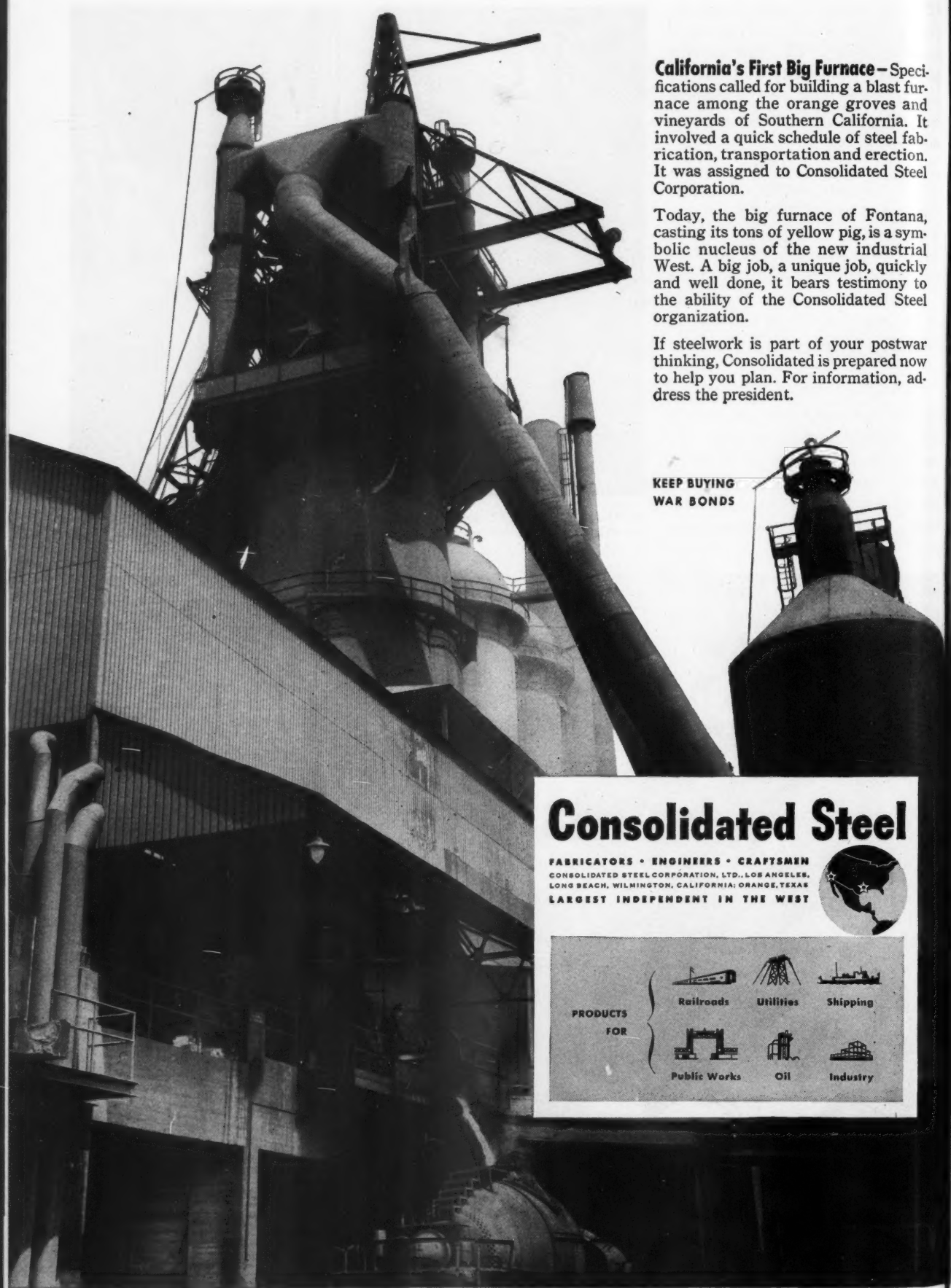
The rotary machine, with 20½-in. opening has rated capacities of 250 tons under dead load and 125 tons under rotating load. Used with this machine are a master bushing and pin drive kelly bushing of different make. In the master bushing square



An Abegg & Reinhold Kelly Bushing and Master Bushing are used with an Emsco Rotary Machine driven through an underfloor drive by horizontal Twin Steam Engine below.



Afternoon Tour, Standard of California's Deep Well, KCL 20-13 Left to right: H. L. Pond, Driller, R. A. Geissel, Relief Derrick Man; R. E. Smith, Derrick Man; H. D. Deakins, Rotary Helper; S. B. Gupton, Fireman; A. R. Keeler, Jr., Rotary Helper.



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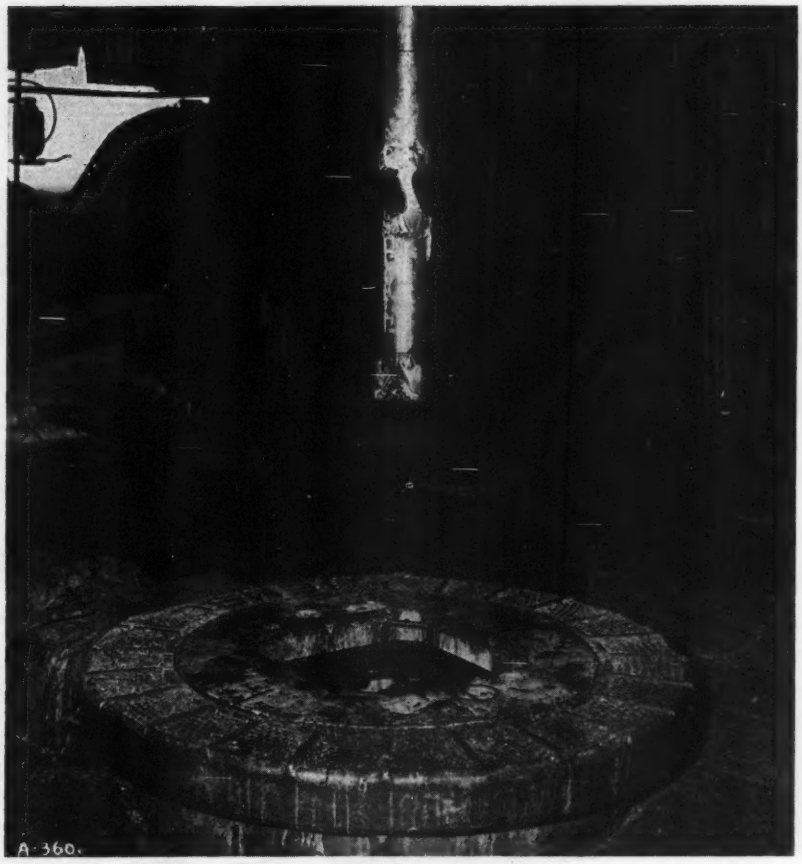
openings are eliminated, the bowl extends to the top and the drive is transmitted through two pins. The master bushing is locked tightly with the kelly bushing to make an integral unit. The slips for the 3½-in. drill pipe are of the cluster type.

The drilling control instrument is a bobtailed seal-tight weight indicator with mud pump pressure gauge, tachometer and torque indicator. This instrument has been remodeled as to hook-up by Standard.

Boiler Plant

Steam for operations is furnished by five 100 h.p., locomotive type boilers, one with working pressure of 300 psi and the other four with working pressures of 250 psi. The boilers are insulated, have continuous blow-downs and are equipped with 28-ft. stacks which have automatic jets controlled by steam line pressure. Other boiler attachments include reflex gauge glasses, tricocks, control valves and blow-off valves. The boilers are fired by gas burners and are equipped with fire box type superheaters.



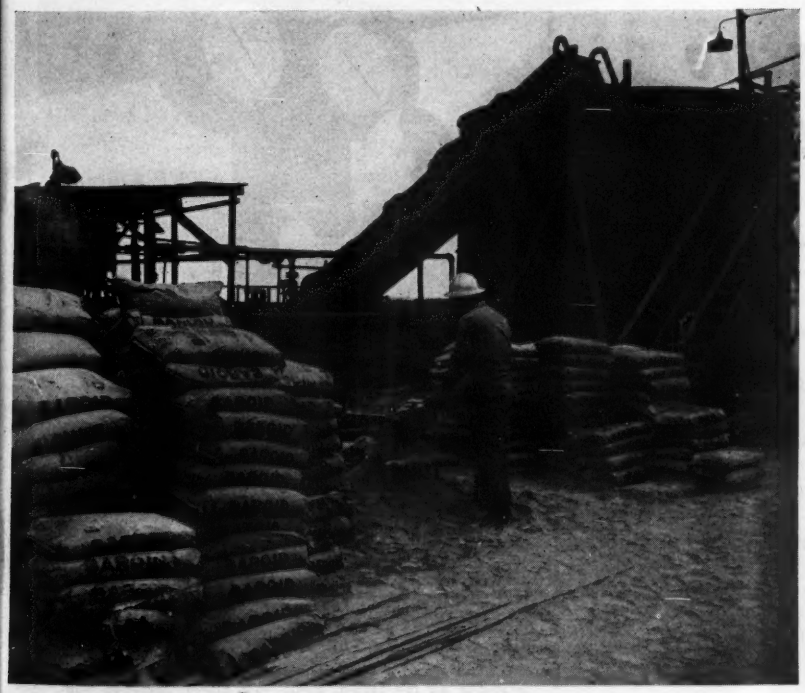
Coming out of the hole after drilling to 15,651 ft. A Sievers Reamer run above a Hughes Bit.

The boiler feed water is handled by two 7″x4½″10″ pumps. The feed water is treated in a water softener and passes through an open type feed water heater.

Mud Plant

There are two mud circulating pumps in service, one an 18″x8″x20″ and the other a 16¼″7¾″x20″. The pumps have lift suction and are manifolded for compounding. The suctions are 10-in. and a 10-in. union with blind flange is used for compounding. Valves in the high-pressure discharge line are 4-in. flange type.

Two auxiliary mud pumps are used. One is a 14″x7¼″x14″ applied to mud mixing and general utility



The weight of the mud was controlled by the use of Baroid which is here shown being added to the mud fluid.

One battle that never ends

Continued improvement in processes and products means constant search and research. Warman keeps abreast of developments and contributes its share in their attainment... through complete engineering service and laboratory control. If your production calls for steel castings* this "know how" service is at your disposal.

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in moving mud. The other is a 14″x6¾″x14″ for pumping mud over the degassing tower. This tower is of the "fisher-ladder" type made in the Standard Oil Company shops.

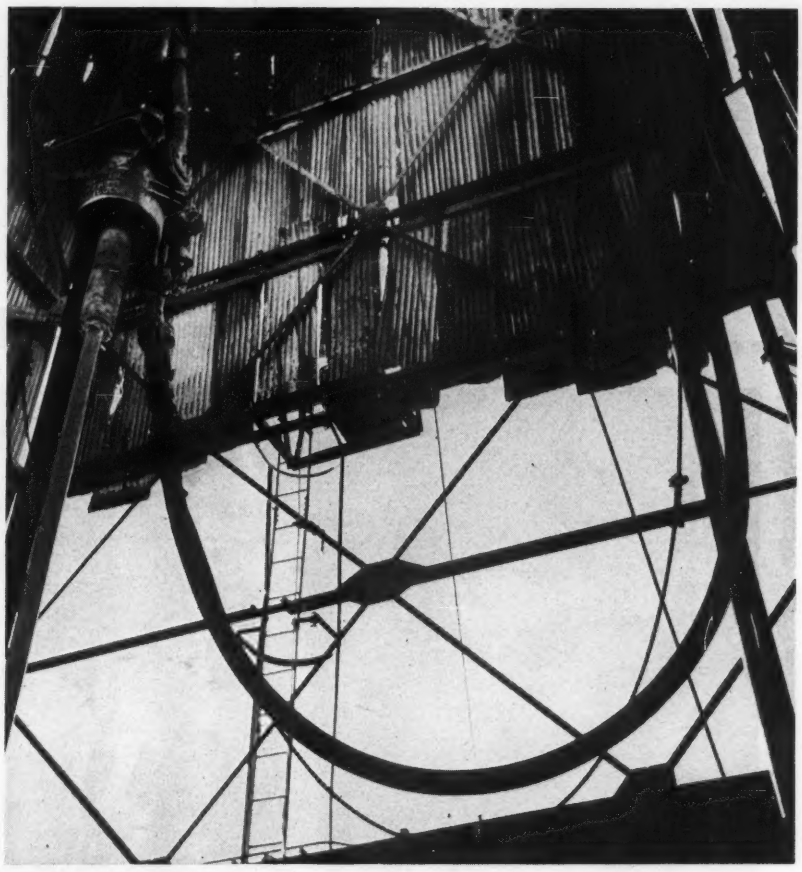
Mud returns are screened with two 48″x60″ shaker screens set in parallel. Both of these screens are belt driven by 3 hp. explosion-proof electric motors. Mud storage is provided by two 1000-bbl. tanks.

Drilling Operations and Subsurface Equipment

After spudding in, 15½-in. hole was drilled to 1188 ft. where 11¾-in. casing was cemented with 600 sacks of construction cement. This string was made up with a slip joint float shoe. A 10⅝-in. hole was then carried to 10,999 ft. and a string of 7-in. casing there cemented with 1000 sacks of high temperature cement. The 7-in. casing was equipped with a float shoe on bottom and a float collar above the shoe joint. It was estimated that the cement extended up behind this string to approximately 8500 feet. From the 7-in. shoe to present depth the hole has been 5⅞-in. diameter.

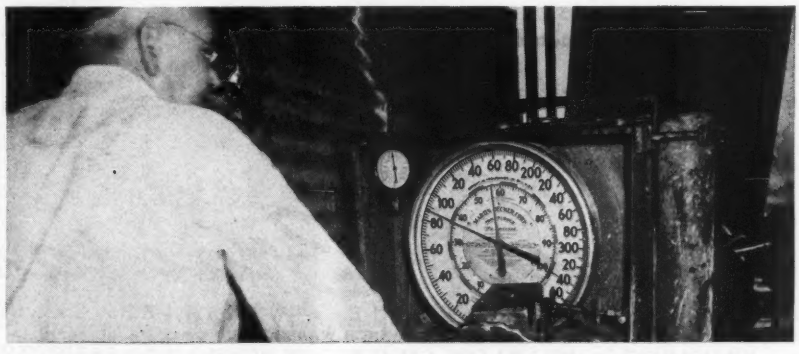
The hole has been held as nearly vertical as possible by frequent use of an inclination recorder which measures small angles accurately and provides readings of inclination in fractions of a degree. The hole has been kept in exceptionally good condition throughout its entire depth and at no time has it been more than three degrees off vertical.

The casing head is a 13⅜-in. by 7-in. full opening type with slip over for welding. The safety equipment on the casing consists of two 9⅝-in. cellar control gates and a 9⅝-in. blow-out preventer. One of the gates is provided with rams to pack off around the 3½-in. drill pipe being used and the other with blind rams for a complete shut off. Operation of this equipment is by remote manual control.



Up the derrick can be seen an Oilwell Swivel and a Grizzly Hose.

The drill pipe at present is 3½-in. diameter in its entirety. The top 49 stands, approximately 4300 ft. are 3½-in., 15.5 lb. per ft. pipe with I.F. joints. The next 111 stands, approximately 9900 ft., are 3½-in., 15.5 lb. per ft. pipe with slim hole joints. This pipe was originally I.F. but was converted to slim hole by having the I.F. joints cut off and slim hole joints pressure-welded on. The bottom stands are 3½-in., 13.3 lb. per ft. slim hole. That portion of the drill pipe located in the 7-in. casing while drilling is equipped with 5¼-in. casing protectors placed approximately one per stand of pipe.



The Martin-Decker Weight Indicator which controlled every foot of Standard's KCL 20-13.

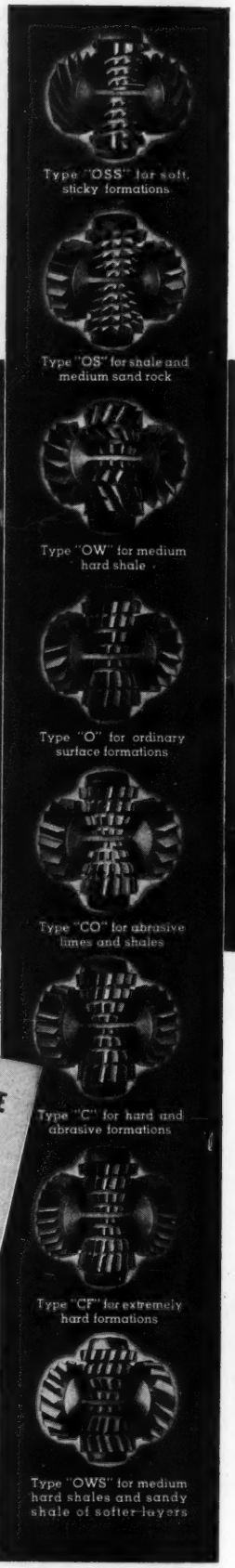
Another DEPTH RECORD

...and "CRUMS" were in the hole

COMING out of the hole on Standard's K.C.L. 20-13 after setting a new world's record. When Standard's K.C.L. 20-13 established a new world's record, "Crums" were in the hole

INDIVIDUALIZED BIT SERVICE TO MEET YOUR REQUIREMENTS

Crum-Brainard's individualized bit service—tailored to meet your field drilling problems—is ready to serve you. If standard bits don't fit your requirements, we'll gladly make a bit to fit your specific needs.


Type "OSS" for soft, sticky formations
Type "OS" for shale and medium sand rock
Type "OW" for medium hard shale
Type "O" for ordinary surface formations
Type "CO" for abrasive limes and shales
Type "C" for hard and abrasive formations
Type "CF" for extremely hard formations
Type "OWS" for medium hard shales and sandy shale of softer layers

Crum CB Brainard

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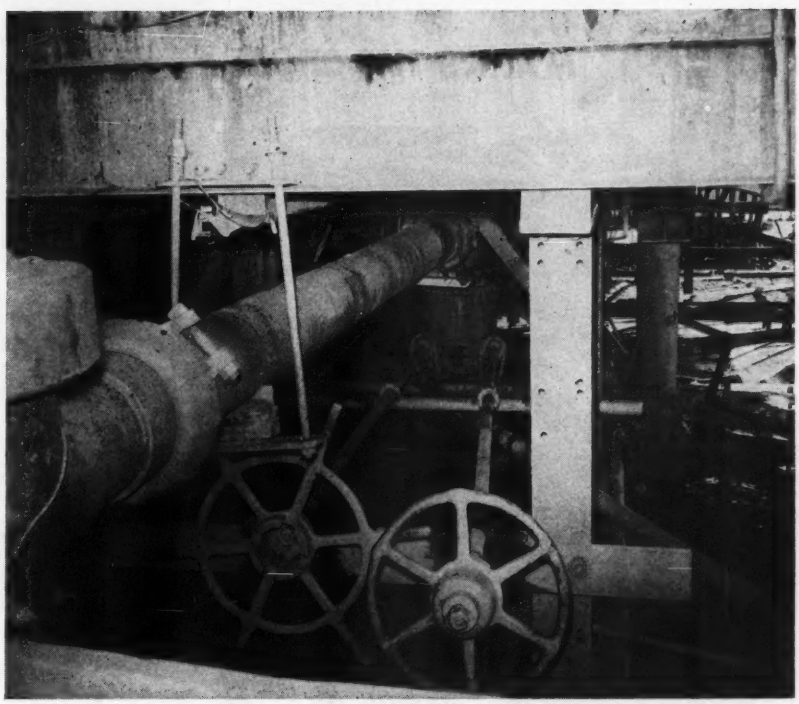
FOR MORE HOLE AND STRAIGHTER HOLE USE CRUM-BRAINARD BITS

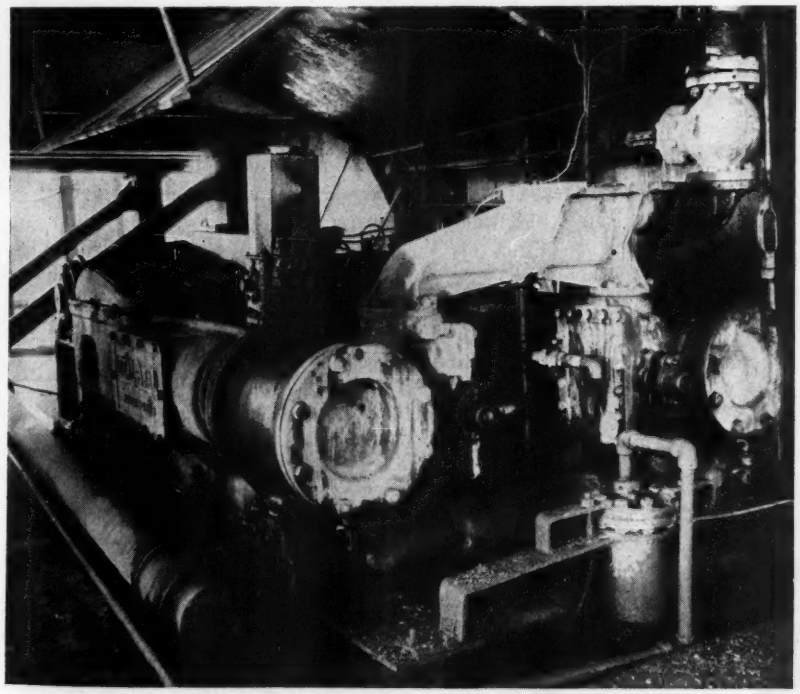
Three drill collars are used, all being 4½-in. O.D. by 30 ft. with 2¼x3¼x5 box both ends. A reamer has been run above the bit and rock bits of several makes have been employed.

The weight of the mud used for drilling the shallower depths ranged from 78 to 80 lb. per cu. ft. but in the deep drilling it has been kept at from 90 to 93 lb. per cu. ft. While passing through the Stevens zone it varied from approximately 82 to 84 lb. per cu. ft. The weight is controlled by the addition of weight material and mud weight tests were made periodically. Other tests made on the mud are for wall building qualities, water loss, viscosity pH, etc. Where oil and gas have been encountered in the returns the mud was treated with quebracho and pyro to control viscosity.



Two Shaffer Cellar Control Gates provide safety and are opened and closed by the remote control wheels here shown.

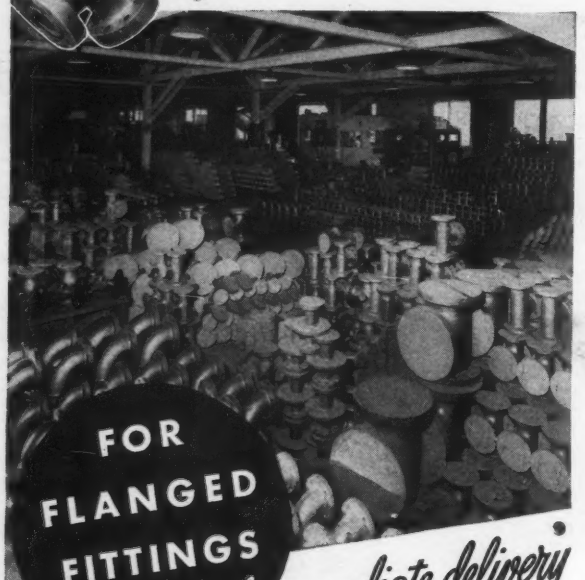
Both wire-line and the conventional method of coring were employed to take physical samples of formation below nine thousand feet. The wire-line equipment was used from 9213 ft. to 9590 ft. and the conventional core barrel from 9590 ft. to 14,710 ft. The cores were taken continuously between 9213 ft. and 9686 ft. and at intervals between 9736 ft. and 14,710 ft. It has been reported that spot coring has been done below 15,500 ft. but actual depths at which the cores have been taken at this depth have not been reported. Core laboratory analyses of cores from 9213 ft. to 10,309 ft. were made for permeability and porosity. Standard Oil Company Production Laboratory analyses of cores were made from 11,976 ft. to 12,530 ft. and from 12,240 ft. to 14 073 ft., also for permeability and porosity.



The rotary machine is driven by this 12" x 12" Ideal Ajax horizontal twin steam engine set below the derrick floor.

Four electrical logs have been run to date and all formations from the shoe of the 11¾-in. casing to a depth of 13,538 ft. have been so logged. It can be expected that an electrical log will be run after drilling is finished or before the well is completed in the case of striking oil. Such a log will provide forma-

X MARKS THE SPOT



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Our location and prompt manufacturing service assures fast delivery if sufficient quantities are not in stock.

High pressure NIKELADIUM* flanged fittings are alloy cast steel to comply with A.P.I. and A.B.S. requirements.

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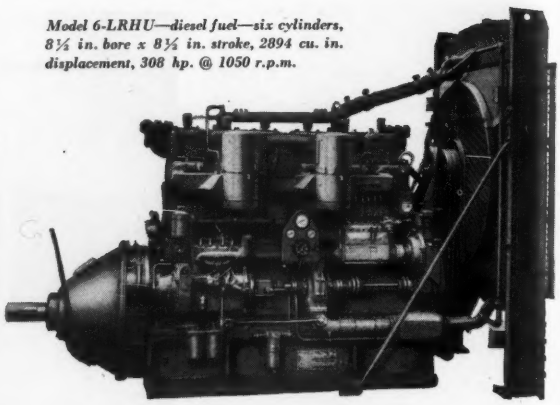
Model 6-LRHU—diesel fuel—six cylinders, 8¼ in. bore x 8¾ in. stroke, 2894 cu. in. displacement, 308 hp. @ 1050 r.p.m.



WIDER ADAPTABILITY IN DRILLING

This is the one drilling engine that not only burns high-speed diesel fuels . . . of either high or low cetane . . . but Nos. 1, 2 or 3 domestic furnace oils just as efficiently. And it's even more adaptable . . .

As drilling progresses . . . and gas is struck . . . this engine can switch over to burning natural gas. An hour's time does the whole job—like this . . .

Apply a gas carburetor . . . and gas spark plugs . . . replace injectors with blind plugs . . . unbolt fuel pump coupling—and it's all set to go. Not one major part has to be changed!

With this engine are these other advantages: Mounted directly on the power plant is a small 4-cylinder gasoline engine starting unit . . . giving it high sustained cranking ability. • A heavy-duty clutch for direct connection to the rig drives. • Rugged radiator, with fan fully protected by heavy wire guard and shroud. • Oil coolers and automatic safety control give greater dependability and protection against low oil and overheating. For complete details, *get Bulletin 1116.*

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MORE POWER FOR VICTORY

WAUKESHA HESSELMAN *Oil* ENGINES

tional data for the entire depth of the well in addition to that obtained by any physical cores recovered.

Whether or not oil is discovered at this three-mile depth, Standard's Coles Levee Well KCL 20-13 is an outstanding achievement which indicates the depths that may be penetrated when skill and experience utilize present-day drilling technique and employ the modern equipment now available. The weekly drilling progress of this well after reaching 14,000 ft. is given in Table I which shows how rapidly hole was made at depths never before penetrated. It will be noted that progress was slowed down considerably by extremely hard formation between 14,810 ft. and 15,037 ft. and that during the week ending August 22 only 14 ft. were drilled. At times only one foot could be made before it became necessary to change bits; and while drilling there, some 165 ninety-foot stands of drill pipe had to be handled in making a round trip. In making a round trip at that time it took a little less than eight hours, approximately 3½ hours being required to come out and about 4 hours to go back in. The total weight of the drill pipe and accessory equipment supported by the derrick when drilling at 15,000 ft. was estimated at approximately 250,000 pounds.

Hughes Core Bit after taking core below 15,651 ft.

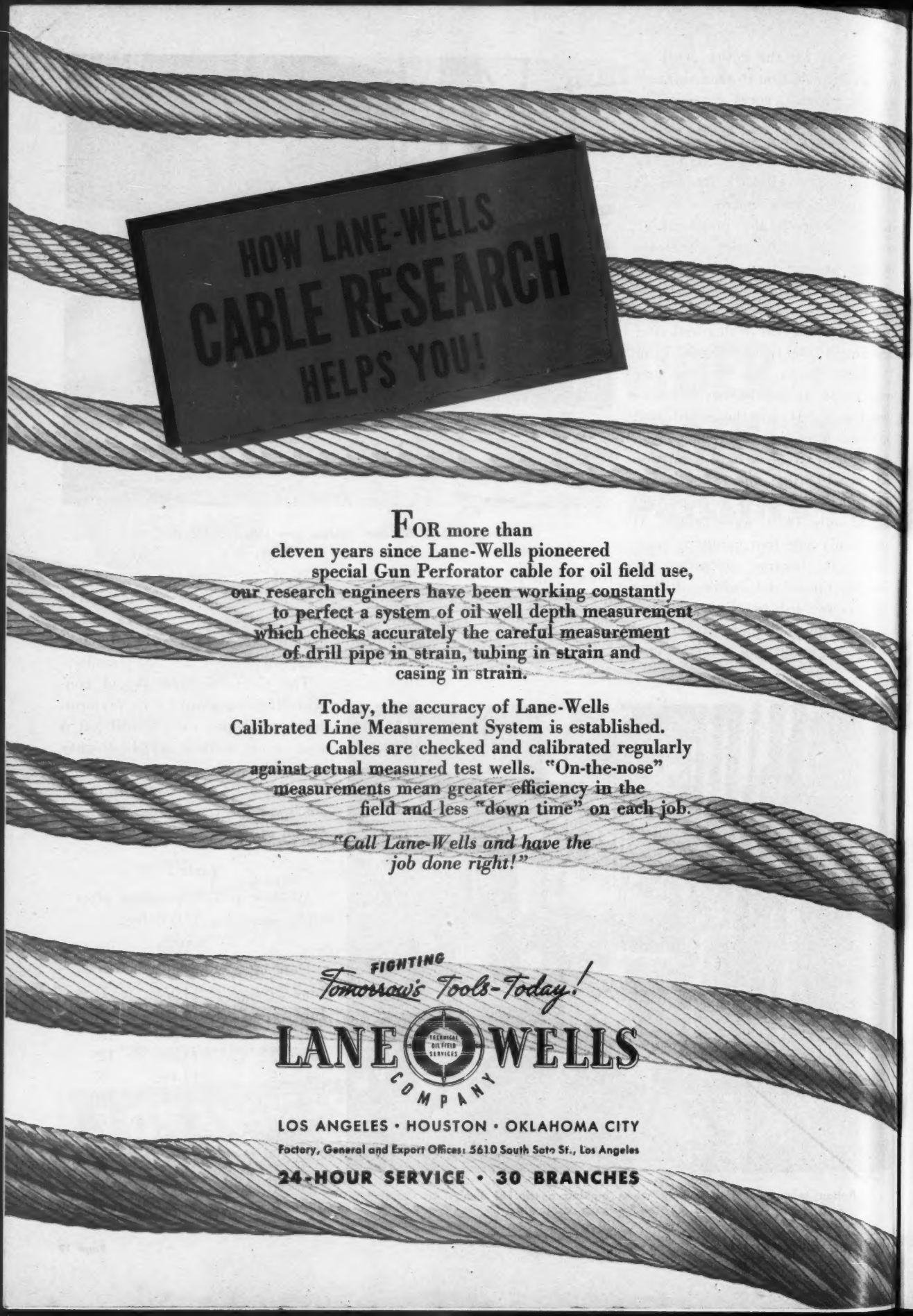
The California Oil World congratulates Standard on its performance and hopes that it will get a well—a big well. It will be mighty glad to have the opportunity of describing in its next issue the methods used for completing the deepest oil producer in the world.

Action is smooth and efficient when making a trip. BJ Tongs are here shown on the 3½-inch drill pipe.

Table I

Weekly drilling progress after reaching 14,000 feet.

Date	Well Depth	Feet Drilled
June 29	14,073	..
July 5	14,170	97
July 12	14,300	130
July 19	14,425	125
July 25	14,492	67
Aug. 1	14,632	140
Aug. 9	14,711	79
Aug. 15	14,810	99
Aug. 22	14,824	14
Aug. 29	14,843	19
Sept. 6	14,875	32



FOR more than
eleven years since Lane-Wells pioneered
special Gun Perforator cable for oil field use,
our research engineers have been working constantly
to perfect a system of oil well depth measurement
which checks accurately the careful measurement
of drill pipe in strain, tubing in strain and
casing in strain.

Today, the accuracy of Lane-Wells
Calibrated Line Measurement System is established.
Cables are checked and calibrated regularly
against actual measured test wells. "On-the-nose"
measurements mean greater efficiency in the
field and less "down time" on each job.

*"Call Lane-Wells and have the
job done right!"*

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Tomorrow's Tools-Today!

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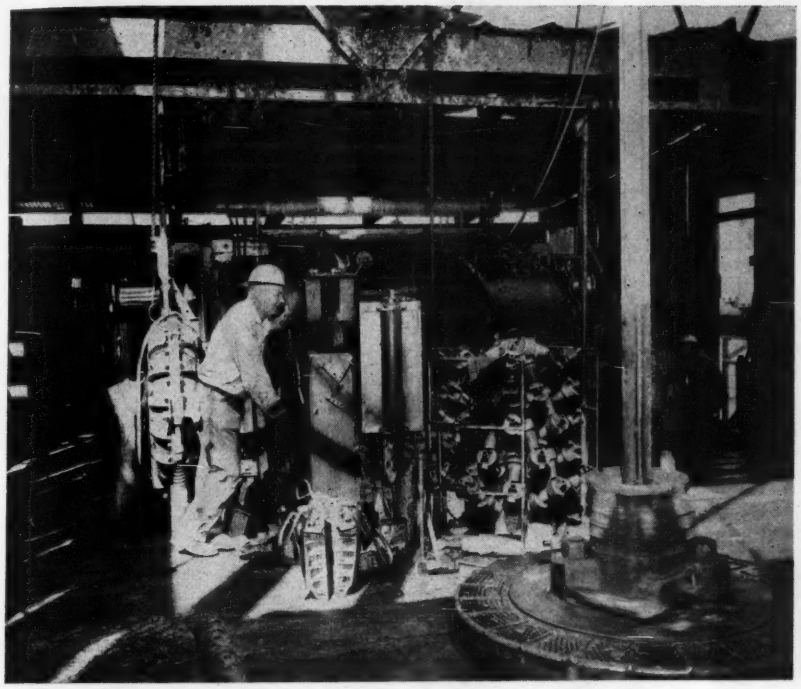
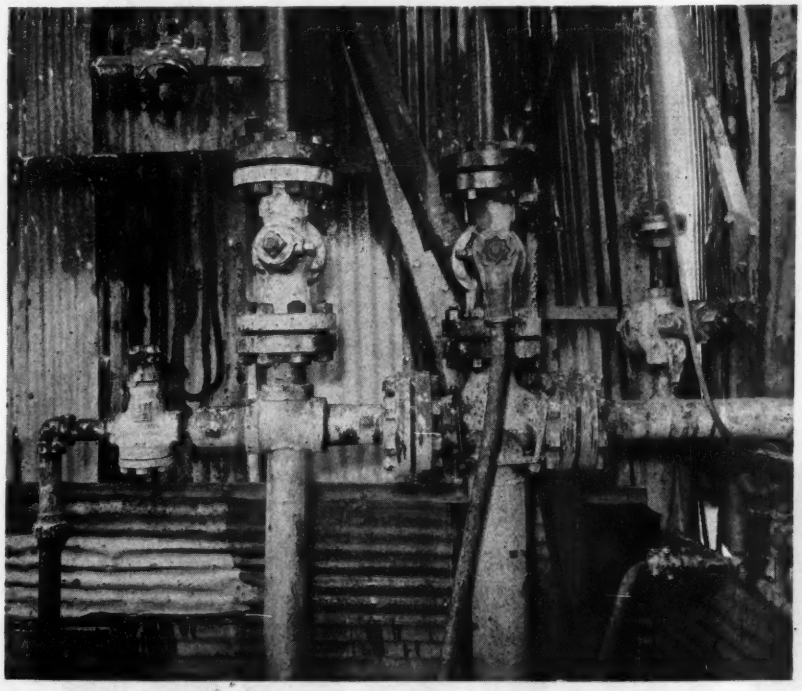


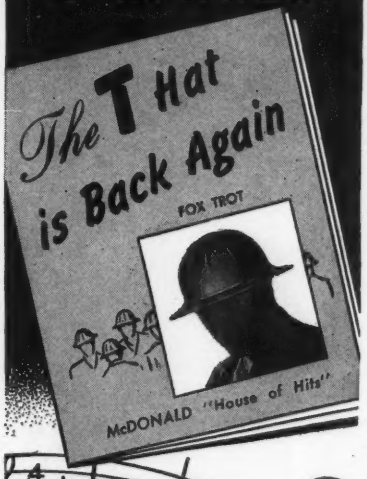
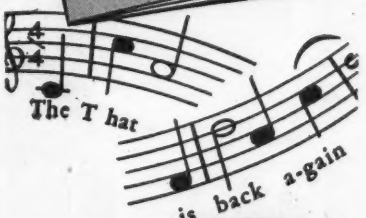
The Drawworks is an Emsco with 54-inch brake rims and 10-inch grooved drum shaft.

Sept. 12	14,900	25	Oct. 17	15,319	160
Sept. 19	14,943	43	Oct. 24	15,455	136
Sept. 27	14,979	36	Oct. 31	15,651	196
Oct. 3	15,037	58	Nov. 7	15,815	164
Oct. 10	15,159	122	Nov. 13	15,845	30



The Standpipe Manifold is equipped with Nordstrom Hypreseal Valves.

No. 1 on the Hat Parade!



BACK AGAIN on production – the famous McDonald Type "T" Safety Hat. Favorite of workers everywhere, this super-tough aluminum-alloy hat takes lots of punishment, delivers safety plus! The "T" hat returns with a new feature, too – an adjustable, full-floating headband that fits any head size, attaches instantly to either shell size, large or small. Toughest, coolest, most comfortable hard hat on the market – weighs only 11¾ oz. complete. Write for new Bulletin.

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Again, on Standard Oil Company's KCL 20-13 (1) at Cole's Levee, Grizzly products have played an important part in drilling the world's deepest well. On this well, (2) Grizzly Pressure-Seal Rotary Hose; (3) Grizzly "No-Wip" Line Savers; (4) Grizzly Giant Drill Pipe Protectors. Congratulations to Standard Oil Company and its crews for a fine job under many severe difficulties.

GRIZZLY MANUFACTURING COMPANY

Manufacturing Plants: Los Angeles, California, and Paulding, Ohio.

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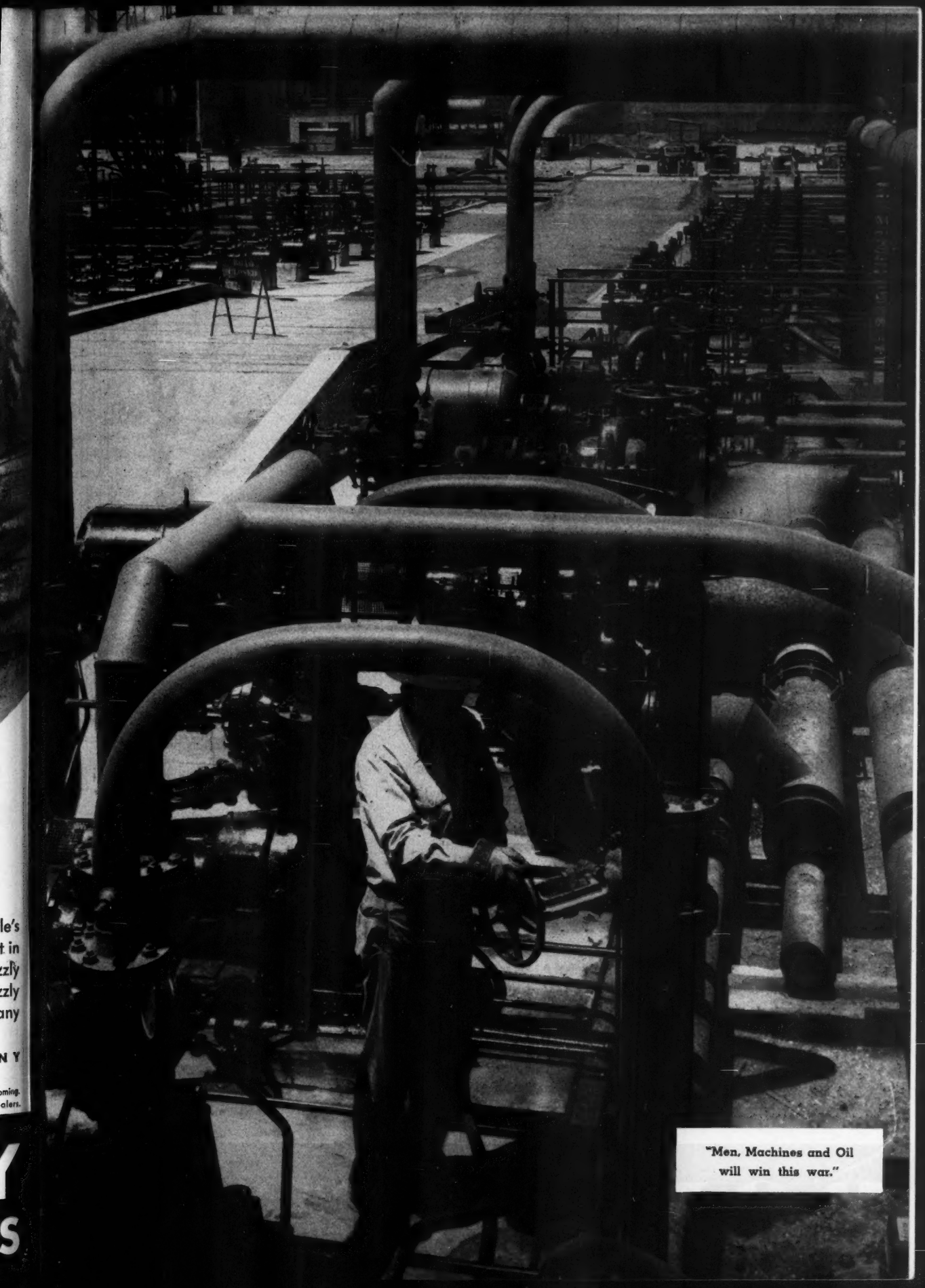
GRIZZLY
QUALITY OIL FIELD PRODUCTS

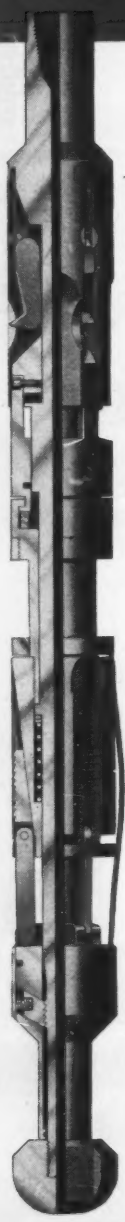


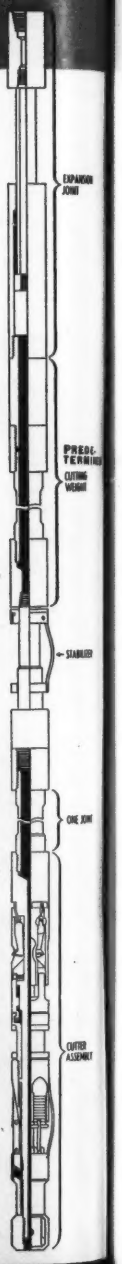
"Men, Machines and Oil
will win this war."

Inside Tips ON INSIDE CUTTING JOBS!

To cut down your risks and eliminate second-guessing on inside pipe cutting jobs, Bowen has developed a *special method of cutting* that insures you the safest, easiest and most efficient job possible!

It's a combination of the regular Bowen Internal Pipe Cutter, and accessory equipment especially made to provide the ideal downward weight on the cutter knives for the particular grade, size and weight of pipe to be cut. With this equipment, weight on knives is exactly right to give you clean, accurate cuts without tool chattering or crawling, regardless of pipe size!





CUTTING WEIGHT PREDETERMINED

In the accessory equipment illustrated at right, the Pre-determined Cutting Weight is simply the number of joints of the cutting string required for proper downward pressure on the knives . . . and this data has been worked out by Bowen for every size of casing, drill pipe or tubing you may have to cut. The run-in string is held in tension above the assembly by means of the expansion joint shown, so that only the proper pre-determined weight is allowed to feed the knives. A stabilizer is provided to center the cutting tool in the hole and insure full-diameter cuts. Once the cut is complete, elevating the cutting string restores the entire assembly to a run-in position and it may either be raised or lowered for additional cuts *without coming out of the hole!*

The Bowen Internal Cutter is ideal for use with the Bowen Jar and Spear for all types of cut-and-pull operations. It is carefully built of the finest materials, is of simple rugged design, and can be obtained in a full range of sizes—complete with accessory equipment—from your nearest Bowen Service Store.

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Gard Opens 19th Annual C. N. G. A. Meeting

Address, C. D. Gard, Union Oil Co. of Calif., president California Natural Gasoline Assn., at opening of afternoon session, 19th Annual Fall Meeting, Calif. Natural Gasoline Assn., Biltmore Hotel, Los Angeles, Oct. 13, 1944

Mr. Chairman, Members of the California Natural Gasoline Association, Friends, and Guests:

This meeting today is the Nineteenth Annual Fall Meeting of this Organization which was organized in June, 1926 by a small group of California men engaged in the manufacture of natural gasoline and, its allied industries.

The men who were responsible for the founding of this society were pioneers, inspired by the ambition to perpetuate an organization of men, the association of which, would be dedicated to the purpose of providing a common meeting ground for those interested in the dissemination of knowledge pertaining to the Natural Gasoline Industry and its problems.

The membership of the California Natural Gasoline Association has steadily grown and at the present time totals in excess of 500. The membership not only represents the natural gasoline producing areas of the United States, but includes many scattered throughout the entire world. The Association has been well supported by a large group of California oil companies, natural gasoline companies and companies engaged in the supplying of various manufactured products to the manufacturers of natural gasoline.

One of the many activities of the Association has been the compiling and publishing of standard methods of tests and procedures for use by the industry. The first bulletin was published in 1928 and outlined a tentative standard procedure for making the 30#-32° Charcoal Test. Since that time, seventeen bulletins have been published, some of which are revisions of earlier bulletins. These bulletins cover a wide range of subjects and provide a common reference of inestimable value to those engaged in making product, quality and quantity tests and to others whose responsibility deals with control of procedures.

The men actively engaged in the preparation of these bulletins are members of our Technical Committee who have been selected for their ability and knowledge of the subjects assigned. These bulletins are available to anyone regardless of membership in the Association and have been widely distributed, many going to foreign lands.

The Association provides, through its monthly meetings, papers and discussions of timely, up-to-the-minute subjects. These meetings are for members, their guests and friends and all others who may wish to attend. For those living within this immediate area, our monthly meetings are held the first Thursday of each month at the Rio Hondo Country Club and for those living in the Taft-Bakersfield Area, the meetings are held on the second Thursday of each month at the Standard Oil Company Lease, North of Taft.

C. D. Gard
President, C.N.G.A.

The work of your Association may be crystallized in the words of our former President, George Ratcliff, in his address before the Fall Meeting of 1927 in which he said: (Quote)

"In my opinion, this Organization can increase the efficiency of the Natural Gasoline Industry in California in at least five ways, as follows:

First: By concerted effort towards improving and perfecting apparatus, equipment and process of manufacture.

Second: By eliminating waste and duplication of effort.

Third: By recommending uniform methods, specifications, tests, etc.

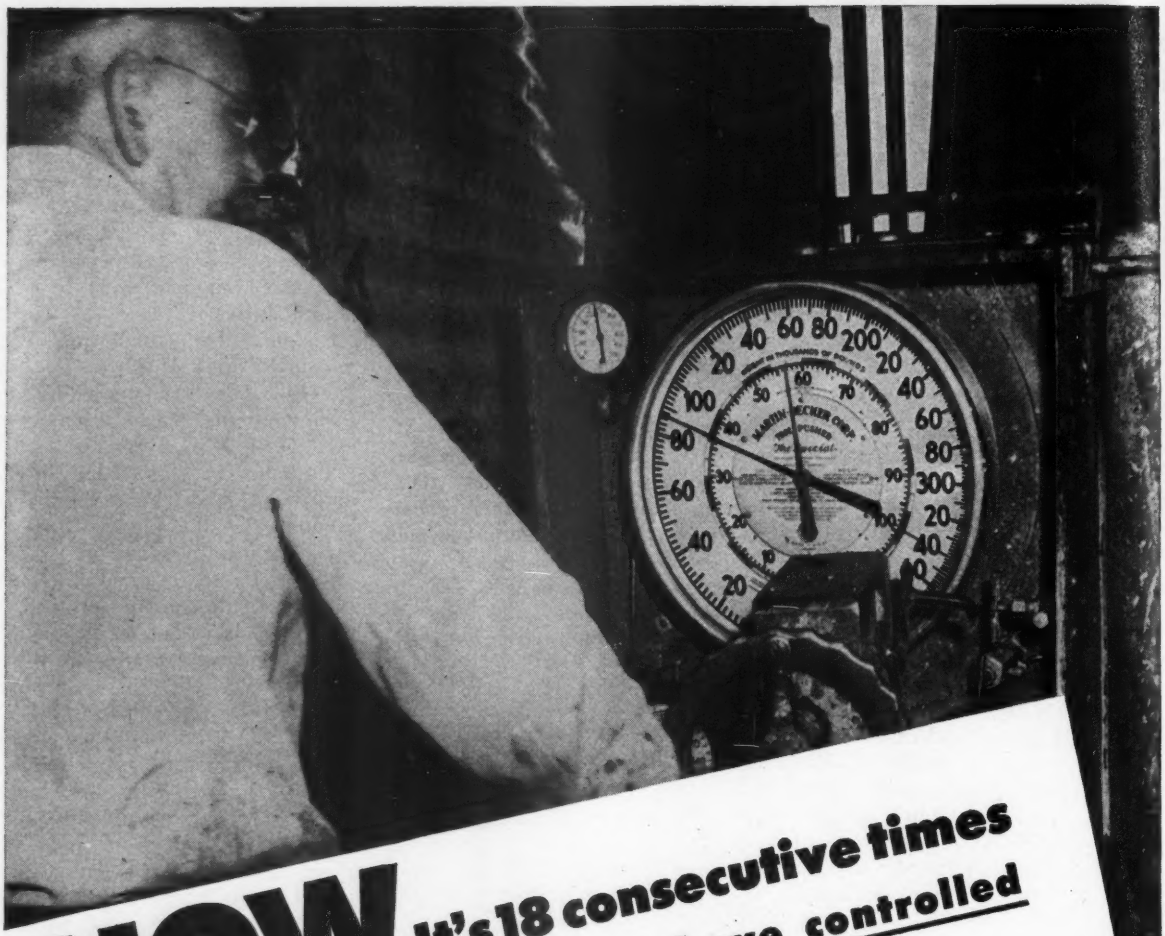
Fourth: By stimulating thought and effort on the part of individual members of the industry who attend the meetings, and

Fifth: By the gradual elimination of the hostility, suspicion and distrust which is apt to develop between those competing in the industry when there is no common point of contact." (Close Quote)

The work accomplished by the many committees assigned numerous test and procedure problems is evidenced by our published bulletins. By unified effort in this respect, all of us have gained a superior knowledge with the least total effort and have, so to speak, learned to talk a common language. Your presence here today and the past attendance at our monthly, annual and other meetings is proof that we, in some measure, have succeeded in stimulating thought and the desire to exchange ideas with one another. Our meetings have to a large extent, we believe, broken down that barrier of "hostility and suspicion", largely through our becoming better acquainted with one another and a gradual willingness to freely exchange what we, have after all, found to be common knowledge to a greater or lesser degree. All this has been brought about by a better understanding through mutually discussing our problems.

In these times of strife and the inciting of group against group, let us not lose sight of our purpose. The attainment of our past and the success of our future can only be fulfilled by clear thinking, resolute planning and the wisdom to solve our common problems by free discussion, without prejudice.

Now let us briefly review the past



NOW It's 18 consecutive times Martin-Decker Instruments have controlled a record-breaking well!

THIS business of furnishing control instruments for world's record wells is becoming a fixed habit with Martin-Decker. For over 18 years in every country in the world where a new depth record has been established, Martin-Decker's drilling control instruments have been used.

Every foot of Standard Oil Company's K.C.L. 20-13 was controlled with a Martin-Decker Weight Indicator.

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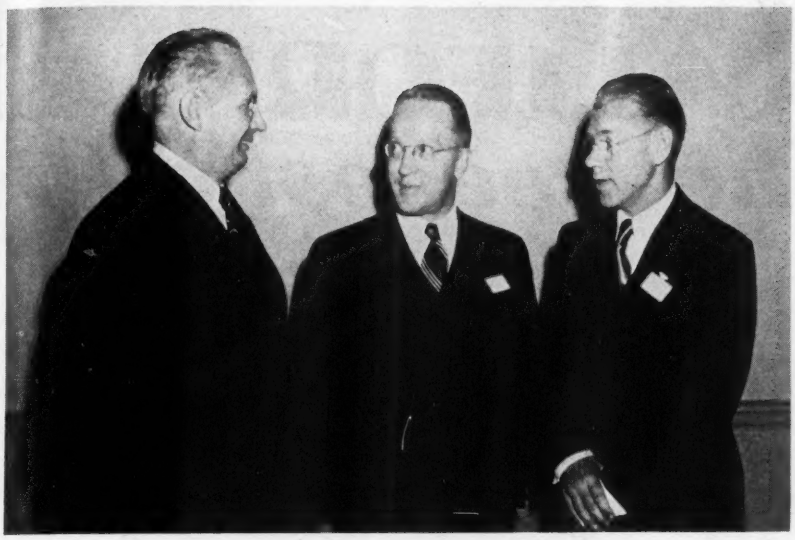

Speakers, Morning Session, 19th Annual Fall Meeting, California Natural Gasoline Association, Biltmore Hotel, Los Angeles, October 13, 1944. Left to right: E. P. Valby, Richfield Oil Corp.; W. M. Schaufelberger, Calif. Research Corp.; G. M. Liljenstein, Calif. Research Corp.

year's progress of the Natural Gasoline Industry in California. It has been highlighted by the continued expansion of our various processing facilities. Many plant improvements have been made to further increase the supply of the lighter hydrocarbons. There still exists an active demand for butanes, the iso-butanes for alkylation and the normal butanes for motor fuel and as a component part of L.P.G. An increased demand for propane has been brought about by the diversion of butanes from L.P.G. and by an increase in the total demand for L.P.G.

The expansion of our processing facilities included the completion and placing in operation this year, of plants in the Santa Maria Field and the Paloma Field. The Santa Maria Plant of the Union Oil Company being the first and only absorption and compressor plant in this field and at the present time is handling in the neighborhood of 20,000 Mcf/Day. This plant has provided an outlet for gas production which was largely being blown to air. One of the difficult problems in the design of this plant was the limitation to a very large use of idle and salvaged equipment and the facilities required for the removal of H_2S.

The Paloma Plant is unique in that it is the first "Condensate" Plant to be placed in operation in California. Also, it is the first plant in California to be built and operated under the so-called "Unit Plan". This plant is operated by Western Gulf Oil Company and is located southwest of Bakersfield and is now processing approximately 50,000 Mcf of gas from the "Condensate" zone, at an absorber pressure of 2,000 lbs. The Paloma Field is still being developed and some outlying black oil production is now included within the "Plan".

The South Coles Levee Unit, California's second "Unit Plan" is now in operation, however, the new plant and other facilities have not been built. Engineering plans are rapidly being completed and actual construction of the plant facilities should begin in the near future. This plant will have an absorber operating pressure of 1,500 lbs. and also will have a capacity of 50,000 Mcf/Day. The Ohio Oil Company will be the operator. The field has been well defined and developed and the plant will operate on production now largely curtailed. The South Coles Levee Field produces both black oil and "Condensate".

The California production of natural gasoline products at the present time totals in excess of 47,000,000 gallons per month of natural gasoline and in excess of 9,000,000 gallons of L.P.G. per month, substantial increases over the previous year. While the potential supply of propane is considerably in excess of sales, lack of customer and transportation propane equipment has prevented its utilization. This situation is improving and no doubt will continue at an increasing rate as war demands for material become less critical.

The future of our industry lies ahead of us and no doubt there will

Speakers, Afternoon Session, 19th Annual Fall Meeting, California Natural Gasoline Association, Biltmore Hotel, Los Angeles, October 13, 1944. Left to right: F. D. Parker, Bechtel-McCone Corp.; R. C. Lassiat, Catalytic Development Corp.; Chas. E. Webber, Petroleum Administration for War; Dr. Chas. L. Thomas, Universal Oil Products Co.

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be new problems to solve. We have been faced in the past with the spectre of overproduction and mounting natural gasoline storage. Under the war impetus, we are now straining to produce all the usable products possible. We have also been threatened with curtailment of demand for our products by changing refinery processes but we have found that new uses of these products have stimulated further production and I believe we should have no fear of facing the future and its attending uncertainties as long as we have faith in the American way of doing business.

In closing, I wish to extend a welcome to all who are attending and participating in this, our Nineteenth Fall Meeting, particularly those out-of-town or out-of-State guests. Perhaps some of you are attending for the first time. We are happy to have you with us. We hope you have and will continue to enjoy our program. We regret, that lack of facilities for the evening may prevent some of you participating in that portion of the program which has been planned for your relaxation and pleasure.

Group, 19th Annual Fall Meeting, California Natural Gasoline Association, Biltmore Hotel, Los Angeles, October 13, 1944. Left to right: Geo. L. Tyler, Secretary, C.N.G.A.; C. D. Gard, Union Oil Co., President, C.N.G.A.; M. L. Arnold, Richfield Oil Corp., Vice-President, C.N.G.A.; H. A. Dresser, Flour Corp. Ltd., Chairman Registration Committee; H. P. Saueressig, So. Calif. Gas Co., General Fall Meeting Chairman; R. R. Crippen, The Texas Co., Chairman, House Committee

Nomads October Meeting

An overflow attendance enjoyed the regular monthly dinner meeting of the Los Angeles Chapter of Nomads held at the Clark Hotel, Los Angeles on Wednesday, October 11, 1944. After the Pledge of Allegiance to the Flag, the President, Roland E. Smith, introduced Ted Sutter who inducted into honorary membership Charles M. Potter of Richmond Petroleum Co. from Venezuela who, because of his sojourn in foreign fields, had not been able to attend a Nomad meeting since his election several years ago.

A short talk on action in the Pacific was given by Lt. L. R. Langey, U. S. Marine Corps, who had been cited for bravery by Admiral Nimitz and had received several other decorations. Lt. Langey was a tank platoon commander at Tarawa and after that served in other island actions.

Hi Cassidy, master of ritual, then inducted C. M. Byron, Baker Oil Tools, Inc., as Regular Member, and Stanley Atkinson, MacClatchie Mfg. Co. as Associate Member.

Jim Robinson, chairman of the Membership Committee, announced that the following men had been elected to membership:

Harold S. Armstrong (Lummus Company), Regular Member; Ward B. Tennis (International Cementers, Inc.), Regular Member; Larry M. Coker (Byron Jackson Co.), Associate Member; H. K. Browning (Kobe, Inc.), Associate Member; T. K. Stancliff (Globe Oil Tool Co.), Associate Member.

After a brief intermission, moving pictures showing the progress and development of television were shown. These were sound pictures but after their showing Hal Davis of General Electric Co. discussed the future of television. Hal Hill of the same company then gave a talk on the application of electrical equipment in military and naval operations and told of the research and development work necessary under time limitations that was necessary to provide the armed forces with highly technical devices. Several reels of action pictures supplied by the U. S. Navy followed. All present then got a kick out of some camel pictures provided by Charlie Potter, said pictures being very intimate scenes which he took while in Arabia.

Among those present were Nomad Earl Rees who is now a captain in the Marine Corps and former Nomad H. E. Thompson who is a major in the Quartermaster Corps. Before going into the army, Eddie Thompson was with the N.P.P.M. in Sumatra. With him was Capt. Thomas Eddington who served with him in Australia.

The other foreign guests present at the meeting were:

Conway Adney of Mene Grande Oil Co. from Venezuela; Gil N. Akin and Howard Keck of Iraq Petroleum Co. from Qatar, Arabia; M. H. Bush and F. H. Rhyner of the Kansu Oil Mining Administration from China; A. C. Bush of Drilexo from Brazil; A. T. Bogdonov, F. A. Nisoff and N. A. Perkov of the U.S.S.R. Commission, Moscow; Mace Freeland, Geo. E. Mackey and Harry Tyner of the American Arabian Oil Co., Arabia; S. L. Slaughter and L. A. Sweeney of International Pet. Co., Peru; Frank R. Wilmer of Caribbean Petroleum from Venezuela.

Commander Osgood Heads Caltech V-12 Program

Commander W. H. Osgood, former director of District 5 for PAW, has been appointed commanding officer of the Navy's V-12 training program at the California Institute of Technology, Pasadena.

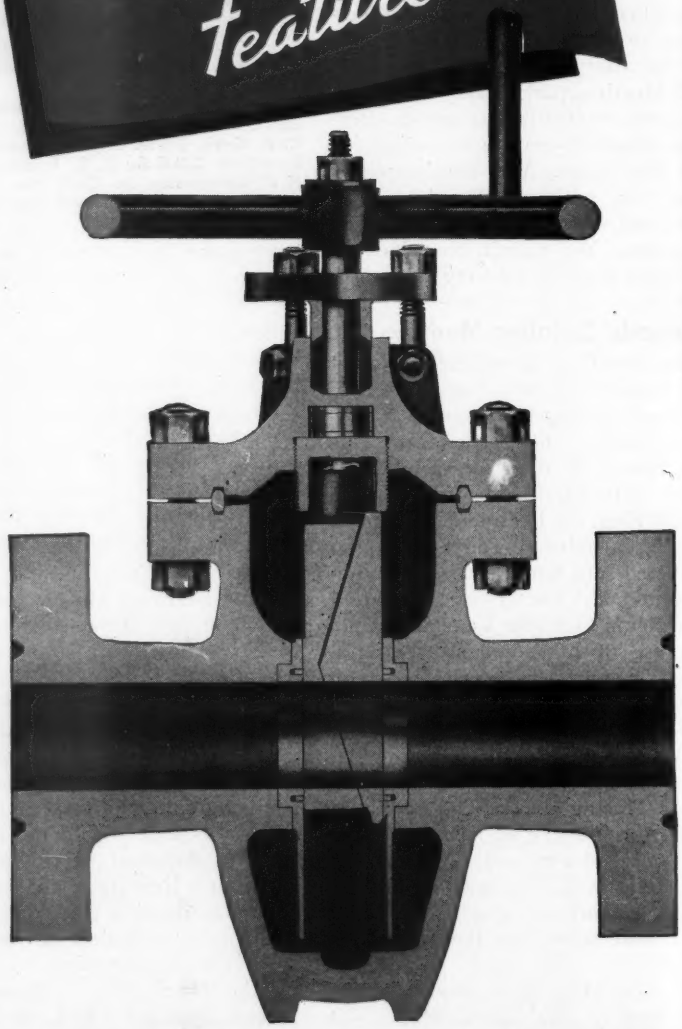
Only IN W-K-M VALVES

This LUBRICATION *Feature*

The design of the W-K-M Valve permits a method of lubrication not possible in any other valve. Both the body and bonnet serve as a grease reservoir, containing a surprisingly large amount of grease. The 3" Valve, for example, holds about 6 pounds, enough to last indefinitely.

Every moving part of the valve is constantly in a bath of lubricant. The gate is submerged in grease at each operation, which contributes to the remarkable ease of closing, however, the W-K-M Valve does not depend on grease to make a perfect seal. Such complete lubrication absolutely prevents internal corrosion and reduces friction to a minimum, both of which so often cause valves to leak.

This is another of the several reasons why you may be sure that a W-K-M Valve will always effect a complete shut-off and will always open or close under full rated pressure.



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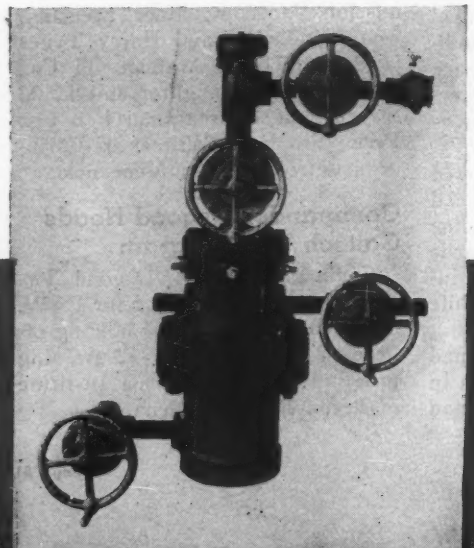


The Valves Make The Tree

For example, this W-K-M equipped Christmas tree is assembled on a casing head and tubing head manufactured by National Supply Company.

Greenhow Joins Olds Alloys Co.

M. E. "Mac" Greenhow has been elected vice-president and general manager of Olds Alloys Co., 8686 Rheem Avenue, Southgate, according to an announcement made by Russel B. Olds, president.

For many years Mr. Greenhow has been identified with developmental work in metallurgy and

M. E. Greenhow

foundry practices and brings to the growing organization a wealth of technical experience gained in some of the nation's outstanding industrial plants. As chief chemist in the McCord & Co. Chicago plant during the last war, Mr. Greenhow had charge of special metallurgical work on airplane fragmentation bombs. With Nash Motors in Kenasha, Wisconsin, from 1919 to 1923 he had charge of the development of higher strength cast iron of nickel-chromium type for automobile cylinders, and constructed special cupolas for faster melting of iron. During this period he also did consulting work for Buick and Chrysler Motors. From 1923 to 1927 he was metallurgist for Westinghouse Airbrake and developed high strength wear-resisting castings for air brake equipment.

Mr. Greenhow came to the Pacific Coast in 1927 as superintendent of the Washington Iron Works in Seattle and directed the electric steel foundry, the iron foundry, and brass foundry for that company until 1935 when he joined the Federated Metals Division of the American Smelting and Refining Company in San Francisco as assistant superintendent and later served as general superintendent of their Los Angeles plant.

For the past year he has been plant manager and sales manager of Berg Metals Co. in Los Angeles.

The addition of Mr. Greenhow to the executive staff of Olds Alloys Company is in line with the company policy of expansion into the fields of specialized foundry work in non-ferrous alloys for food machinery, mining equipment, petroleum equipment, aviation and special types of bearings for industrial uses.

Pennington Appointed by Graver

Mr. Ben D. Pennington, who has a broad background covering every phase of the oil and gas industry dating from 1918 when he drilled wells in Texas and Oklahoma, and who is also well known around the country — and particularly on the west coast as a top-flight construction man—is now associated with Graver Tank & Mfg. Co., Inc., as manager of their Los Angeles office at 908 South Atlantic Blvd. His major interests will be directed toward the construction field wherein he has enjoyed notable success.

Ben D. Pennington

Recently Mr. Pennington completed supervising the construction of a west coast catalytic cracking plant which since has broken all existing records for continuous runs.

Simpson Advanced by Neilsen Pump

The Neilsen Pump Company of Long Beach, California has announced the promotion of Grey Simpson to the position of Field

Grey Simpson

Representative in the Wilmington District. Mr. Simpson has been employed in the Company's Taft Branch Store as Store Manager for the past three years. During the six year period from 1935 to 1941, he was an employee of the Union Oil Company, spending most of his time in their production department at Dominguez. His association with the Union Oil Company and the Neilsen Pump Company has given him a thorough knowledge of modern pumping practices. The constantly expanding business of this company has made it necessary to increase their service personnel. Mr. Simpson's headquarters will be the Company's main plant at 3204 Cherry Avenue, Long Beach.

Thermofor Catalytic Cracking

Paper Delivered Before the California Natural Gasoline Association September 7, 1944, by H. S. Armstrong of The Lumnus Company

The present wartime demand for 100 Octane Gasoline is tremendous, and exceeds all early anticipations. This super fuel increases the horsepower output of an airplane engine of a given weight and greatly reduces fuel consumption at cruising speed. Increased power is of paramount importance on the takeoff when maximum output is required to lift a plane into the air with a large bomb load. It permits top performance of pursuit planes. Air supremacy gained and held by the Allies owes its success in no small measure to American refineries meeting the ever-increasing demands for this fuel.

100 Octane Aviation Gasoline is not a single component product as might be assumed by the layman. Extensive research and development work resulted in the industry producing a very satisfactory 100 octane fuel, in large quantities, by blending 15 to 20% isopentane, selected aviation base stock and sufficient high-octane blending agent, such as alkylate, so that the blend will lead to 100 octane with the specified maximum quantity of ethyl fluid. The final blend must also meet certain vapor pressure, distillation and other specifications.

Isopentane has the desirable qualities of convenient vapor pressure, high-octane number and good lead response to make it an excellent blending component. Isopentane is usually separated from natural or straight-run gasoline by close fractionation but is also found in relatively high percentages in gasoline produced on certain catalytic cracking units and is also present in thermally cracked gasoline. Normal pentane can be isomerized to isopentane but the sources mentioned above have proven adequate except in isolated instances.

Alkylation is the most widely used process at the present time for producing the high-octane blending agent. Alkylation is commonly interpreted to mean the catalytic combination of an isoparaffin with an olefin hydrocarbon. Sulphuric and hydrofluric acids are the most widely used catalysts for effecting this combination. Isobutane is the most commonly used isoparaffin and the butylenes are the most commonly used olefins. Generally, isobutane and butylene give the product with the highest octane number and require the least catalyst make-up and are, therefore, of the greatest commercial importance. Isobutane is commercially recovered from natural gasoline and fractionated from straight run gasoline. It is also present in almost all cracking plant streams. Butylenes are highly reactive chemically and are never found in crude oils. Their main source is cracking plant by-products and production has been increased by adaptation of special units such as polyform and gas reversion units, to charges which consist largely of naphtha. Butylenes can also be produced by the dehydrogenation of normal butane, catalytically.

Base stock is the highest percentage component of 100 Octane Aviation Gasoline. Originally, base stock had its source mainly from selected straight run gasolines, but the quantity was limited due to rigid specification requirements. A good octane rating, a high lead response, oxidation stability and low gum-forming characteristics are highly essential. With the demand for large volumes of aviation gasoline came the demand for a tremendous increased production of base stock which would meet the above requirements. And here is where catalytic cracking came into the 100 octane picture.

Catalytic Cracking had been accepted by the Petroleum Industry for the improvement in yields and octanes of motor gasoline prior to World War No. 2. Commercial plants were justified by the gasoline production therefrom meeting the higher and higher octane requirements and also by the economic advantage derived from high liquid recoveries, and low yield of residual fuels.

The first commercial catalytic cracking plant went into operation in 1936 and was a Houdry unit. Twenty-four Houdry Units of various charging capacities are now in operation. Contribution to the war effort of catalytic aviation gasoline components produced by this process is highly important.

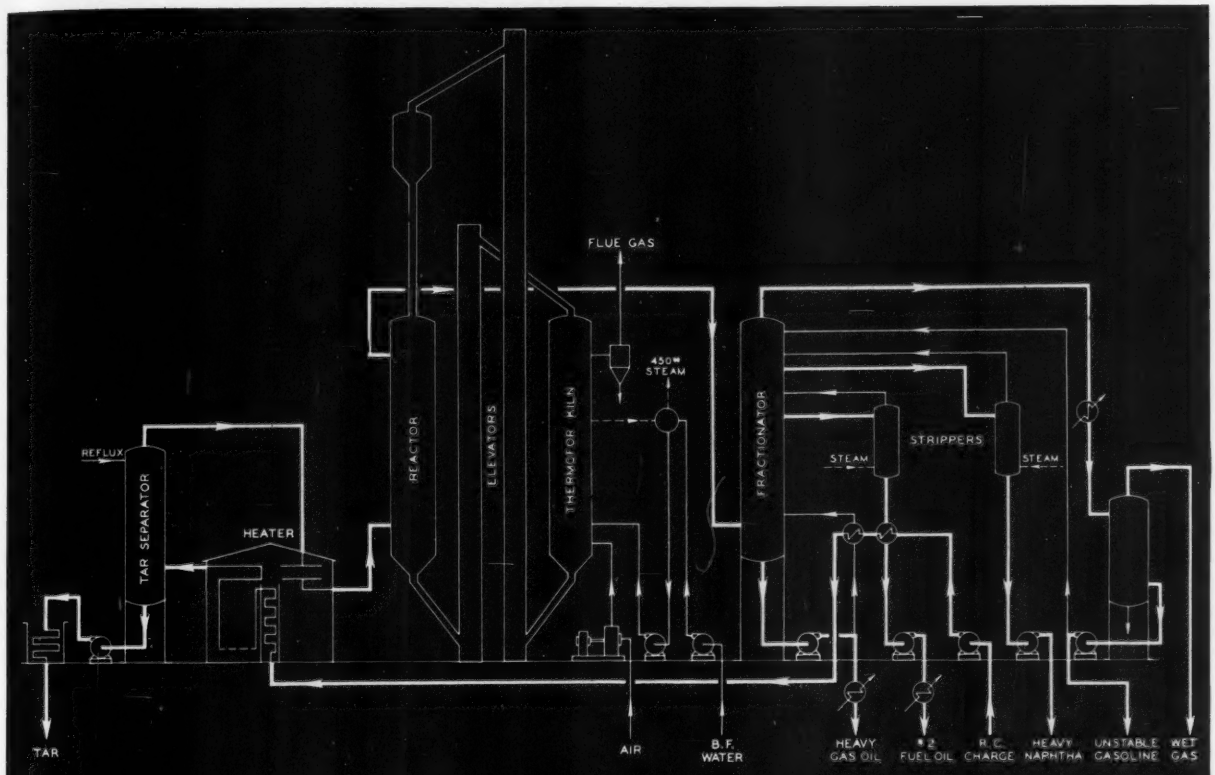
Briefly, the Houdry Process is a static bed process with most plants employing 4 to 12 catalyst cases, manifolded and interconnected for 3, 4 or 6 case cycle operations. The time cycle consists of (a) On stream time, (b) Time for purging and valve changes, (c) Time for Catalyst regeneration. Catalyst employed in the cases is in the form of either clay or synthetic pellets about 1/6" in diameter and length. On once-thru cracking of gas oils for the production of 400° F. End Point 10# Reid Vapor Pressure Motor Gasoline, yields of 40 to 50% by volume with a 78 to 82 ASTM Octane, clear, can be expected. Yield and quality are better when synthetic catalyst is used instead of clay catalyst. By recycling gas oils up to one-to-one recycle ratio, motor gasoline yields may be further increased.

During the war, Houdry Units have been operating almost exclusively for the production of 100 Octane Gasoline components. Aviation Base Stock is produced either by cracking gas oil once through or by subsequent second pass recycle treating of first pass gasoline. Yields obtained range from 25 to 50% second pass base stock depending on charge stock and extent of recycling. Octane levels are realized which permit blending to 100 octane grade with from 5 to 30% of average butylene alkylate, and the specified T.E.L.

The original development work on the Houdry Process was carried out by the Socony Vacuum Oil Company, Sun Oil Company and the Houdry Process Corporation and the Process is licensed by the Houdry Process Corporation.

The foregoing information on the Houdry Process has been given purposely in order to form a background for the Thermofor Catalytic Cracking Process.

What is Thermofor Catalytic Cracking? It is a continuous catalytic cracking process with a moving bed type operation having one chamber for the reaction and another for the regeneration of the catalyst. The Thermofor Catalytic Cracking Process was developed by the Socony Vacuum Oil Company during the six years prior to 1943.



THERMOFOR CATALYTIC CRACKING PROCESS

While the Houdry Process was being commercially developed the Socony Vacuum Oil Company successfully developed and applied the Thermofor Kiln to the regeneration of lubricating oil percolation clays. In 1939 several commercial Thermofor Kiln installations were put into successful operation and little time elapsed before research work was started towards incorporating this unit into a continuous catalytic process. Fundamental research work was carried out to determine flow characteristics of moving granular and pelleted catalysts and to develop equipment for insuring uniform flow of vapors and cataylst through suitable reaction and regeneration vessels. Along with this fundamental research work, a 500 barrel per day semi-commercial TCC unit was built and operated continuously for a period of about two years. Pilot plant performance, plus data and information obtained from fundamental studies of catalyst flow in full scale models, formed the basis for the design of the first commercial TCC unit which was completed and put into operation in the refinery of the Magnolia Petroleum Corporation, a Socony Vacuum affiliate, in October, 1943. Successful continous performance of this unit justified and credited the exceedingly thorough research and development program. Since that time nineteen additional TCC Reactor and Kiln Units have been brought into successful operation with roughly a dozen more soon to be put into service.

World War II greatly stimulated the commercial application of the TCC Process. Original plans called for proving the process commercially in one of Socony Vacuums' affiliated refineries before offering this process to licensees but the tremendous demand for 100 Octane Aviation gasoline prompted Socony Vacuum Oil Company to offer the process through the Houdry Process Corporation for licensing. As a result, many commercial TCC projects were initiated throughout the country and it was not long after initial operation of the first TCC unit before a number of additional plants were also placed in operation. The minor mechanical deficiencies which developed during the first few months of operation were readily eliminated. Operating service factors during the first six to twelve months of commercial TCC application have ranged from 80 to more than 90%. Plants have remained on stream from 60 to 85 days on initial runs. In addition to large quantities of exceptionally high octane aviation base stocks, TCC plants are now producing considerable amounts of olefins and isobutane for the production of aviation alkylate.

In the TCC Process a solid bed of catalyst flows downward by gravity through the reactor and the Thermofor Kiln. Specially designed bucket elevators move the regenerated catalyst from the bottom of the kiln to the top of the reactor and move the spent catalyst from the bottom of the reactor to the top of the kiln. Design of the catalyst feed system permits continuous catalyst flow from the atmospheric reactor feed hopper into the reactor proper, which operates at pressures up to 15 P.S.I.G., by employing a specially designed feed leg.

In both reactor and kiln, uniform distribution of entering vapors and air is of prime importance so that possibility of channeling through the catalyst bed is eliminated. A

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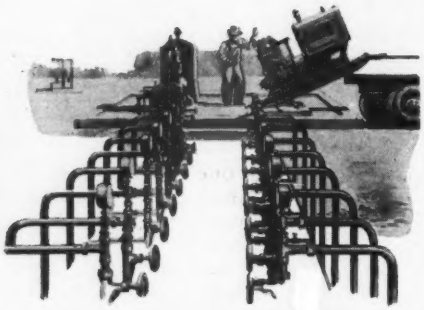

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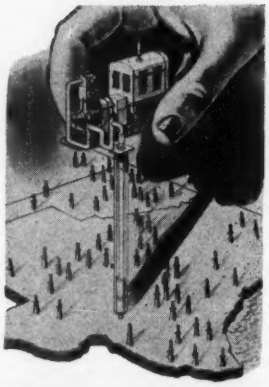

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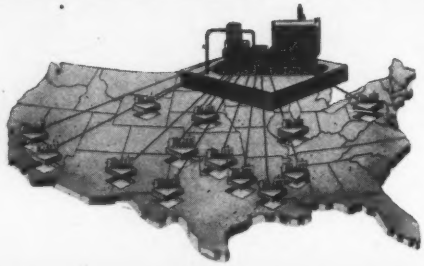
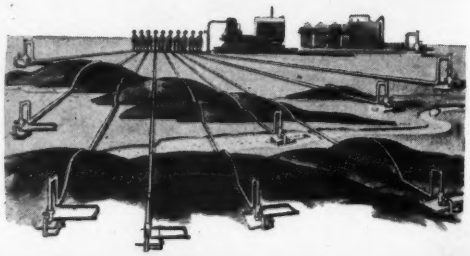


UNIVERSAL ADAPTABILITY



MULTIPLE WELL OPERATION

THE "FLUID POWER" of the Kobe Pumping System is helping production men develop many new pumping advantages never before possible.

Because of "fluid power" you can regulate bottom hole pump speeds by a simple turn of a surface control valve. Because of "fluid power" you can pump more wells or pump the same wells faster by adding a small compact triplex to your system. Because of "fluid power" Kobe equipment can be made small and is easy to install, being quickly movable by lease truck from one well to another. Because "fluid power" will flow through small pipe where directed, Kobe pumping is readily adaptable to any type of production. And because of "fluid power" you can control any number of wells from one central plant, thus insuring big savings in production costs, manpower and horsepower.

Add all these advantages together and you get the reason why Kobe today is changing pumping techniques throughout the principal producing areas. And the reason, too, why Kobe's "fluid power" should be working for YOU.

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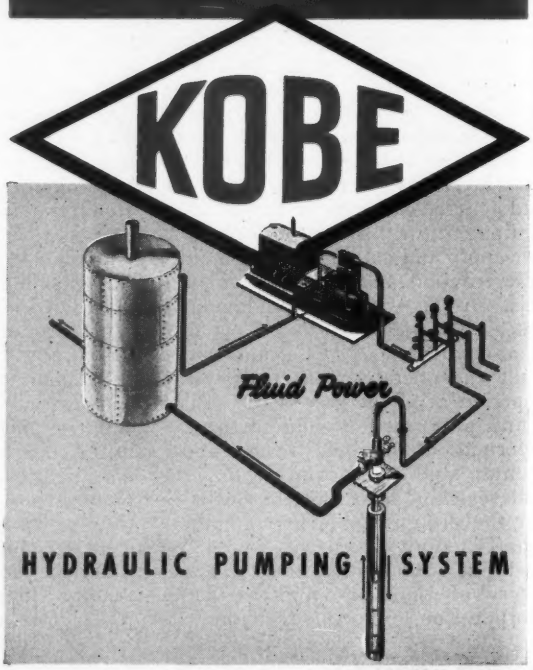


uniquely designed distributing system has proved effective.

As a result of catalyst developments, reactors have been designed for high thru-put capacities without necessitating baffling arrangements for obtaining close oil vapors-catalyst contact. By eliminating internal baffling, reactor zone effective volume is increased and space velocity is given wide flexibility.

Catalyst flow must be uniform in all parts of the reactor and kiln to insure uniform vapors-catalyst contact. An effective means of accomplishing this was incorporated which also caused the cataylst to converge at one outlet point in each vessel.

Please refer to the perspective flow sheet on page 7. Here is illustrated the equipment and processing when starting with a reduced crude and producing wet gas, gasoline, domestic furnace oil and fuel oil. The reduced crude is preheated through the heat exchangers and is either joined with recycle gas oil or charged once, through the vaporizing furnace, then flashed into a tar separator, here fuel oil is drawn off the bottom and gas oil vapors distill overhead then pass through the superheating section of the furnace and thence into the reactor. Here the gas oil vapors contact the moving bed of catalyst where conversion is effected and then pass into the bubble tower where gasoline is distilled overhead. Domestic furnace oil withdrawn as a sidestream, and the recycle gas oil either removed as produce or recycled with the reduced crude. The carbon deposited on the catalyst in the reactor is burned off in stages in the Thermofor Kiln to a residual carbon content of approximately 0.2 to 0.5% weight percent of the catalyst. The heat of combustion is removed largely by the vaporization of boiler feed water for the production of high pressure steam. Air for burning is supplied at approximately 2 lbs. per square inch by a centrifugal blower and may be heated to any desired degree in an air-line burner before passing into the various burning zones of the Thermofor Kiln. The combustion products leaving the Hhermofor Kiln, containing a relatively small percentage of the heat liberated, pass through a cyclone separator for removal of catalyst fines and thence to the stack.

Instrumentation of the unit follows accepted oil refinery practices. The usual flow, temperature and pressure controllers are employed. Instrumentation for controlling the flow of feed water to the boiler drum follows conventional practice. All of the thermofor kilns are provided with a large number of thermowells for measuring temperature above and below each cooling zone and additional thermowells have been provided for measuring the temperatures in the burning zones. In general, burning zone temperatures are limited to a maximum of 1200° F.

In the case of one elevator failure, an electrical interlock stops the other elevator, thus preventing removal of the catalyst from the reactor or kiln with a consequent flooding of the other vessel.

The operation of the elutriators has proven their design to be entirely satisfactory for eliminating catalyst fines from the system. Catalyst lost by attrition has been found to be considerably lower than anticipated.

Catalysts

Clay cataylsts are advantageous from the standpoints of availability in large quantities and the relatively low cost. Large quantities have been required to charge the TCC units coming into production.

There are definite advantages to be gained from the use of the more active, more expensive, synthetic-type catalysts. Socony-Vacuum did considerable research work on synthetic catalysts and developed what is termed the "bead" catalyst, so-called because of its bead-like form and its resemblance to translucent glass beads. Its outstanding merits are physical ruggedness and high catalytic activity.

The actual size and effective surface of the beads are of interest. It has been calculated that one 1/6" diameter bead has an effective surface of 100 square feet that there are 50,000,000 beads to a ton and that the effective surface of a bead catalyst charge for a 10,000 B/D Unit would equal the area of the states of New York, Pennsylvania, New Jersey, Rhode Island, Delaware and the District of Columbia.

At present the TCC process is playing a vital role in the manufacture of high-octane aviation gasoline and of butylenes for the production of synthetic aviation blending agents and synthetic rubber. After the war TCC plants also will be utilized for the production of motor gasoline.

In the original processing scheme, TCC Units cracked gas oil over clay catalyst followed by TCC treating of the resulting motor gasoline. These aviation base stocks required little or no finishing treatment to meet gum, color and other specifications.

Among developments which substantially improved the application of the TCC process for production of aviation gasoline base stocks are:

(a) Invention of bead catalyst previously described.

(b) Application of improved processing techniques in the treating step.

(c) Extension of TCC processing to include a wide variety of charging stocks, other than gas oils, well suited for aviation production.

Bead catalyst is the most important of these development as it permits a large increase in plant output or a substantial rise in quality level over that obtained with clay catalyst.

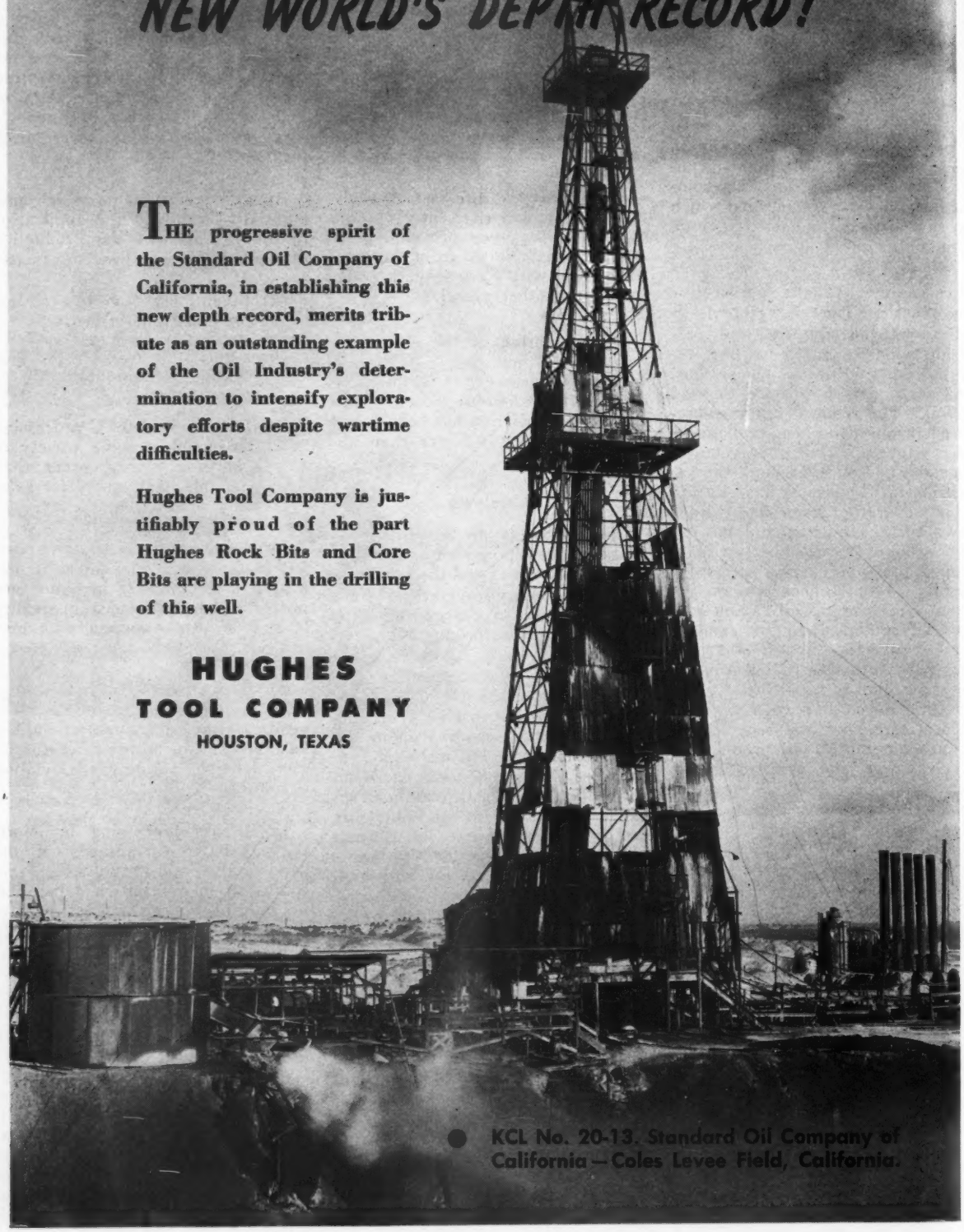
By one-step processing of properly selected charge stocks over bead catalyst good quality aviation-base stocks can be produced for direct blending in high grade aviation gasolines.

In 2 pass processing technique the combined advantages of the bead catalyst and the solid bed reactor result in greater yield per unit volume of charge stocks, greater production per unit of TCC capacity and higher quality of the product.

There are additional sources of charging stocks, other than gas oil, especially suited for aviation gasoline production. These stocks are common to many refineries but were used in motor gasoline or other products. Among these are the light and heavy virgin naphthas. Catalytic reforming of these stocks in TCC units over bead cataylst produces exceptionally high yields of aviation base stocks having excel-

CONGRATULATIONS to the STANDARD OIL COMPANY of CALIFORNIA . . . on the establishment of a

NEW WORLD'S DEPTH RECORD!



THE progressive spirit of the Standard Oil Company of California, in establishing this new depth record, merits tribute as an outstanding example of the Oil Industry's determination to intensify exploratory efforts despite wartime difficulties.

Hughes Tool Company is justifiably proud of the part Hughes Rock Bits and Core Bits are playing in the drilling of this well.

HUGHES
TOOL COMPANY
HOUSTON, TEXAS

KCL No. 20-13. Standard Oil Company of California — Coles Levee Field, California.

lent octane ratings (AFD-1c). The products have well-balanced boiling ranges and meet all other aviation-gasoline specifications. They may be considered as excellent aviation fuels by themselves, being equal or superior to alkylate and similar synthetic fuels in many respects.

The developments in TCC are of a basic nature and apply equally as well to the process for motor-gasoline production.

Motor gasolines of consistently high quality can be produced by TCC cracking gas oils over clay catalyst. C.F.R. motor octane will range from 77 for paraffinic to 82 for naphthetnic stocks. Yield and octane number of the gasoline can be varied somewhat by changing the severity of the operation. The lighter the charging stock, the more severely it can be cracked within the coke-burning limits of the catalyst regeneration system of the TCC plant, thus permitting an added degree of flexibility with respect to the yield and quality of the gasoline produced.

Higher yields and quality of motor gasoline can be obtained with bead catalyst from a given cracking stock. Improvement in yield by use of bead instead of clay catalyst is directly related to the higher activity of the bead catalyst. C.F.R. motor rating of the product is several octane numbers higher than that from comparable operations on clay catalyst.

Bead and clay cataylsts are both good desulfurizing agents in TCC processing. Motor gasolines from bead-catalyst operation are of considerably better volitility than from clay.

Overall advantages of the bead catalyst are (a) increased production, (b) saving in T.E.L. and (c) reduced finishing costs.

Postwar

With the war in Europe approaching an early end, refiners' attention is being given to postwar planning, especially in refineries where catalytic cracking plants have not been installed. Although the immediate postwar period will probably not bring a demand for high octane super-fuels for motor cars, a tremendous catalytic cracking capacity will be available for motor gasoline production.

It is estimated that only approximately 30 to 35% of the more than 500,000 B/D present production of 100 Octane Aviation Gasoline will be required to supply peacetime aviation demands. The remaining capacity will be available for motor gasoline production. The catalytic cracking capacity released from high octane aviation gasoline production will produce much greater quantities of motor gasoline than their present outputs of base stock.

This will undoubtedly result in a rapid increase in the octane level of motor gasoline even though the motor cars will be unable to utilize such fuel in the most efficient manner. It is recognized that during the postwar years, motor cars will be developed which will require 85 to 90 ASTM octane fuel. Therefore, refineries not having catalytic cracking plants are giving serious consideration to the installation of such plants to insure the refiners of a share of the highly competitive postwar fuel market.

A simplified type of TCC unit has been recently developed which places the catalytic cracking process within the reach of the smaller operator desiring to charge from 2000 to 6000 BPSD of gas oil. This modified type of TCC unit possesses a high degree of simplicity and therefore requires a minimum of operational expense, but nevertheless incorporates all of the flexibility of fundamental process variables that is characteristic of present commercial TCC units.

There appears to be a rapid trend towards the selection of relatively heavy stocks for catalytic processing to motor gasoline during the postwar period, prompted by the ever-increasing demand for virgin high cetene number diesel fuels and for home heating oils. Hence, in many instances catalytic cracking plant charge stocks will be relatively void of components boiling below 600° F. and will contain a maximum of the higher boiling components depending upon the limitations of the catalytic cracking process employed. The TCC process is especially well adapted to the processing of heavy gas oil charging stocks as a result of the exceptionally low coke production coincident with TCC operation. For example, TCC units are especially suited to the processing of 26 to 28° API gas oils, having mid-boiling points ranging from 700-800° F. and end points ranging up to 1050° F. Yields will approximate 50% 10# RVP motor gasoline with a motor method-clear octane of 80 and a research clear of 90. With 3cc of T.E.L. these become 86 to 88 and 95 to 96.5, respectively. 25 to 27% #2 furnace oil distillate will be produced and 15 to 17% heavy catalytic gas oil. It should be noted that these operations are characterized by high propane-free liquid recovery and high recovery of 10# RVP motor gasoline plus catalytic gas oil.

The production of home heating oils from heavy gas oil charging stocks in TCC plants adds significantly to other advantages of the TCC process. This heating oil distillate possesses exceptionally good stability and compares favorably with virgin heating oils and with heating oils produced from the Houdry process.

The TCC process offers the possibility of utilizing substantially all crude distillate fractions for production of high-octane aviation-base stock and useful by-products, with little or no auxiliary processing other than fractionation. In the manufacture of motor gasoline the same latitude in choice of stocks exists and, in addition, the output of motor gasoline from a given TCC Unit is much greater than that of aviation gasoline due to the wider boiling range of the product and the elimination of the treating operations.

Acknowledgement and thanks are given to Mr. J. F. Thornton, Dr. E. R. Smoley and Mr. V. O. Bowles of the Lummus Company, for their helpful material used in this paper.

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NOW

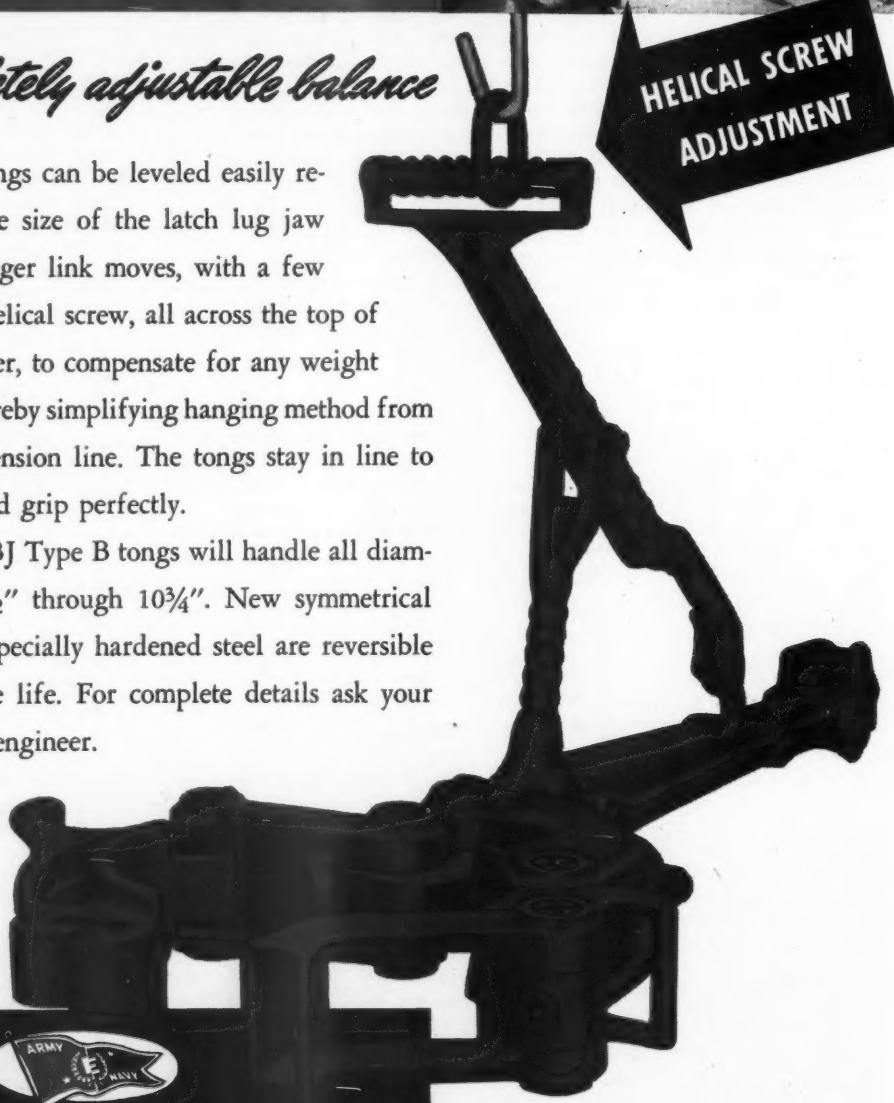
BJ TYPE B TONGS

-with completely adjustable balance

HELICAL SCREW ADJUSTMENT

BJ Type B tongs can be leveled easily regardless of the size of the latch lug jaw used. The hanger link moves, with a few turns of the helical screw, all across the top of the tong hanger, to compensate for any weight difference, thereby simplifying hanging method from the tong suspension line. The tongs stay in line to latch easily and grip perfectly.

One set of BJ Type B tongs will handle all diameters from 3½" through 10¾". New symmetrical tong dies of specially hardened steel are reversible —doubling die life. For complete details ask your local BJ sales engineer.



ARMY E NAVY

BYRON JACKSON CO.

Houston • LOS ANGELES • New York

BJ stands for ENGINEERED oil tools

THIS LAUGH

OFF!!

"Is your daddy home, sonny?"

"No, sir. He hasn't been home since mama caught Santa Claus kissing the maid."

A Negro preacher stopped a young sinner in the middle of his confession: "Son, you ain't confessin'—you're braggin!"

Pa: "It's 2 a.m. Why doesn't that young man go home?"

Ma: "Now, father. Remember how we used to court."

Pa: "What! Where's my shotgun?"

Wabbits have a funny face,
Their private life is a disgrace.
Oo'd be surprised if oo but knew
The awful things that wabbits do
—And often too.

"Last night, I questioned my husband for hours about where he'd been."

"What did you finally get out of him?"

"A fur coat."

A sailor went to an auction. The auctioneer was offering a parrot. He bid $5.00. Someone said $10.00, the sailor bid $15.00. Again someone bid $25.00 and the sailor bid $40.00 and got the parrot. As he walked out he said to the auctioneer, "That's a big price to pay for a parrot, can he talk?" The auctioneer said: "You ought to know, he's the one that's been bidding against you."

"They tell me you have a dog that can play checkers."

"Yep."

"Why man, do you know what you've got there? You could go into the movies and clean up a fortune with a dog as smart as that."

"Humph. He ain't so smart. Last night I beat him three games straight."

Some boys in Kansas City were showing a Texas rancher the town.

"What do you think of our stockyards?" they asked him.

"Oh, they're all right, but we have branding corrals in Texas that are bigger," he said.

That night they put some snapping turtles in his bed. When he had turned back the cover, he asked what they were.

"Missouri bedbugs," they replied.

He peered at them a moment. "So they are," he agreed. "Young uns, aren't they?"

In Memphis, a worried Negro walked into the office of the rent control administrator and asked if anyone could tell him who his landlord was.

Clerk: "Your landlord is the man you pay rent to."

Negro: "I don't pay no rent. You see, 'bout nine years ago I found me a house vacant and moved in. I been there ever since and I ain't never paid no rent."

Clerk: "Well, then, what are you worrying about—You have no complaint."

Negro: "Yassuh, I knows that. But if somebody don't fix that roof, I'm gonna move out."

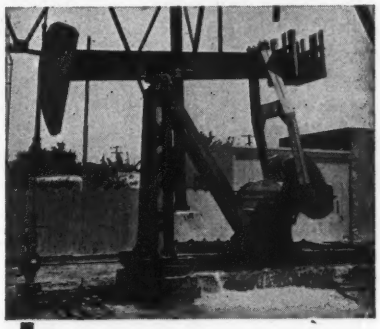
According to an item in Variety, a man bought several hundred very expensive cigars and had them insured against fire. After smoking them all, he put in a claim because they had been destroyed by fire. When the insurance company refused to pay, the man sued. The judge decided that as the company had agreed to insure the cigars against fire and had issued the man a policy it was financially responsible.

As soon as the man accepted payment the insurance company had him arrested for arson.

Army doctor: "Tell me, soldier, how does it feel when you actually kill a man?"

Veteran: "Not so bad, doc, how about you?"

BUY WAR BONDS



You California Producers

. . . could get along nicely if you had never heard of JENSEN Pumping Units.

But—a California well is likely to be more profitable and satisfactory when JENSEN equipped.

If that were our opinion only, it wouldn't be worth much. But successful producers—a lot of them—thoroughly agree. We'd like to tell you more about it. Take time to ask questions.

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Texas Co. Announces Advances

William H. Farrand, Superintendent of Drilling and Production in the Pacific Coast Division of The Texas Company, will transfer on November 16th to American Overseas Petroleum Company as Director and Vice President in Charge of Production, with headquarters in San Francisco, it was announced on Oct. 27th by Torrey H. Webb, Vice President of The Texas Company. The American Overseas Company is jointly owned by Standard Oil Company of California and The Texas Company, and was recently formed for exploration and development of foreign properties jointly held by Standard and Texas, with exception of their Arabian and Bahrein interests. Mr. J. H. Puls, Division Engineer, succeeds Mr. Farrand, Mr. W. A. Clark, District Engineer at Fellows, California, succeeds Mr. Puls, and Mr. T. W. Bell succeeds Mr. Clark.

W. H. Farrand

Farrand, a native of Holley, New York, was first employed by The Texas Company in 1929 as Assistant Petroleum Engineer at Santa Fe Springs and later at Signal Hill. In 1931 he became Superintendent of Ventura District producing operations, and in 1938 he was appointed Superintendent of Drilling and Production, Pacific Coast Division.

J. H. Puls

His previous foreign experience from 1923 to 1927 was with Romano-Americana, a Roumanian subsidiary of the Standard Oil Company of New Jersey.

Farrand is Chairman of the A.P.I. Topical Committee on Drilling Practice, California District; Member of the A.P.I. Central Committee on Drilling and Production Practices, California District; Chairman of District 18 Field Committee of Conservation Committee of California Oil Producers; and Member of the Wildcat Committee of the California Oil and Gas Association.

Mr. Puls is a graduate of the California Institute of Technology in Mechanical Engineering, and was first employed by The Texas Company in 1925 in refinery and pipe line engineering. In 1937 he was placed in charge of Mechanical and Production Engineering for the Producing Department at Long Beach, and he was transferred to Los Angeles in 1940 when he became Division Engineer in charge of the Civil, Production and Development Engineering staff of the company for the Pacific Coast area. He has been active in the work of the American Petroleum Institute and is at present Chairman of the California Committee on Pumping Equipment.

This publication suggests that its subscribers, where convenient to do so, visit the splendid exhibit of paintings by the well known artist, James M. Sessions. These paintings feature the highlights of World War II.

This exhibit is being presented by Tube Turns, Inc. and the Girdler Corp. and is being held in Los Angeles during the month of November at the Union Pacific Railroad Bldg., corner of Sixth and Olive Streets.

James H. Withers, Southern California Representative of Tube Turns, Inc., who arranged for this Coast exhibit.

Subscribers in the northern part of the state will have the opportunity to see these paintings during the month of January, 1945 at the main offices of the Union Pacific Railroad, San Francisco.

Chubb Joins Pacific Lighting Corp.

T. M. Chubb has been appointed Chief Gas Engineer and Assistant Secretary of Pacific Lighting Corporation, with headquarters in Los Angeles, according to an announcement by LeRoy M. Edwards, Vice President and General Manager of the company.

Mr. Chubb had been associated with the Office of War Utilities, Natural Gas Division, in Washington, D. C., as Western Area Chief for almost two years. For six years prior to that time, he was Senior Engineer of the California Railroad Commission, Gas and Electric Division. Previously, he had been in the natural gas utility business in California.

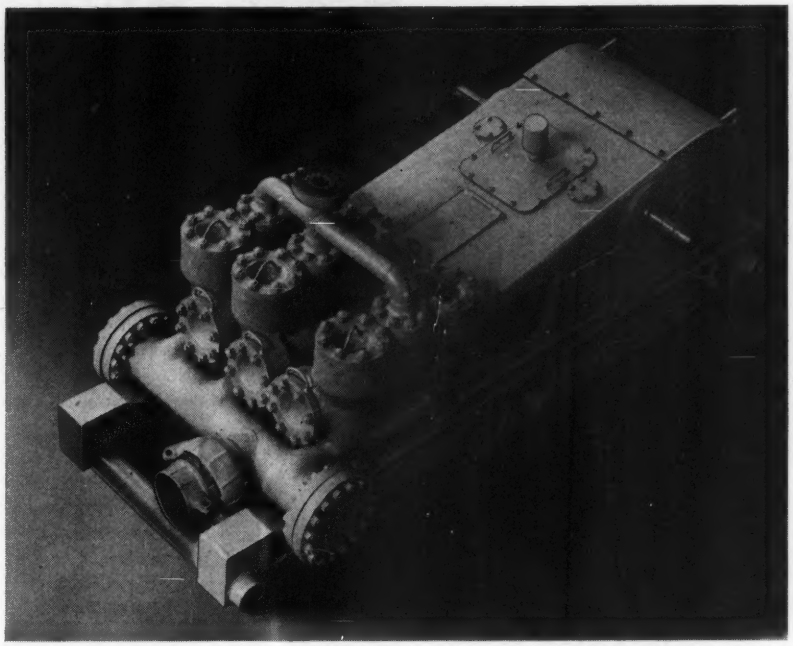
New Slush Pumps Manufactured by Clark Brothers Co., Inc.

Clark Bros. Co., Inc., have just brought out a new Slush Pump, which is fully described in a booklet that is available to all interested persons.

The booklet contains drawings of the vertical cross section and assembly of the pump with part numbers.

Some of the new features are:

1. Triplex Double Acting.
2. Even Hydraulic Power Flow. Pressure variation in discharge reduced from approximately 45% in duplex pump to approximately 14% in Triplex Pump.
3. One-third less weight per H.P.
4. Within 8 ft. Road Clearance.
5. Direct Fluid Flow. Valve over valve construction, both valves removed through one valve cover opening. Discharge valve can be lifted out by hand. With this construction and close clearance, slippage is reduced to a minimum.
6. Easy on prime mover. Reduced Peak Loads will result in lower maintenance costs on pump, engines and transmission.
7. "Porus-Krome" plated cross head extension rod.
8. Fluid end tested 6,000 pounds, hydrostatic pressure. Recommended 3,000 pounds working pressures.



9. All studs in fluid end same size.
10. Liners are supported near both ends to give extreme stability and are packed with two sets of packing with lantern gland between. This lantern gland lines up with tell-tale hole to show if either packing leaks, thus avoiding cutting out of fluid cylinders.
11. Double extended pinion shaft-power can be applied from either side.
12. No main bearing caps and bolts.
13. No connecting rod bolts.
14. Wide faced, herringbone gears of heat treated alloy steel.
15. Controlled splash and cascade lubrication.
16. Renewable crosshead guides in frame.
17. Long connecting rod ratio to stroke length.

The above pictures the completed unit.

Prompt attention will be given to requests for the booklet from the oil industry by writing to Sales Promotional Department, Clark Bros., Co., Inc., Olean, N. Y.

Rubber Goods Manufacturers Take Advantage of Widened Permitted Use of Hycar

Rubber goods manufacturers are availing themselves of the opportunity to obtain special-purpose synthetic rubbers for applications which were prohibited prior to the liberalized WPB Rubber Order R-1, Hycar Chemical Company, Akron, O., reports.

The order as amended August 25, 1944 extended over 100 new uses for Hycar OR crude synthetic rubbers and approximately half of these are applications where such special-purpose synthetic rubbers never have been used before, Hycar points out.

Industrial applications where the special-purpose synthetic rubber has proven superior to natural rubber by Hycar laboratory tests and by performance in actual usage are those in which resistance is required to oil, gasoline or chemicals; to abrasion; to high and low temperatures; to cold flow or creep; and to metallic action. Tests also show high tensile strength and elasticity, and a hardness range from extremely soft to bone hard.

The largest independent producer of crude synthetic rubber made from butadiene, Hycar does not manufacture rubber products but supplies most of the large rubber goods manufacturers and hundreds of smaller firms with the special-purpose synthetic rubber from which these companies compound rubber products with the characteristics needed for special applications.

More common products made from Hycar include rubber hose, belt drives, gaskets, conveyor belts, rubber rollers, engine mountings, packings, industrial protective clothing, industrial truck tires, automobile and tractor parts. Automobile and other vehicular springs, upholstery materials, flexible pipe and conduit, tile and industrial floor coverings, electric cable jackets, protective coatings, are some of the products which may be made from the special-purpose synthetic rubber in the future, Hycar laboratory men foresee.

The company's customer service laboratory is available to all manufacturers and users of rubber products.

BUY WAR BONDS

PETRECO OFFERS *more* THAN THE CONTRACT COVERS

LOOK AT IT THIS WAY: Petreco gives you Field Service 24 hours a day. We can help you meet any operating difficulty, or any accident or emergency which arises. Our field engineers swing into action when your phone call arrives.

LOOK AT IT THIS WAY: Petreco Field Engineers are always near you. Their years of experience, and contact with the problems of others may benefit you. Discuss your emulsion problem with a Petreco engineer. There is no charge for this service.

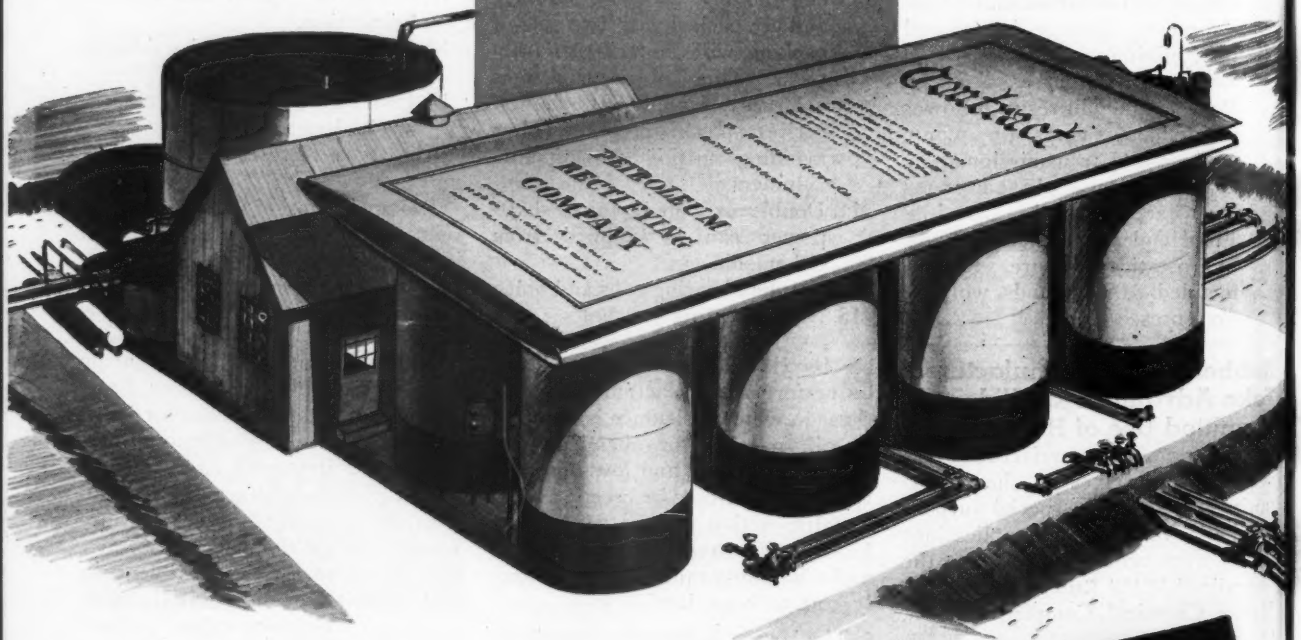
*W*HEN you install a Petreco installation, you are getting certain equipment, piping, tankage, etc. But there are other things you don't see, which are not put into the contract, that are equally as important. Four of them are shown on this page.

In addition, we make available to you an extensive background in handling oil of all types of gravity, viscosity, varying percentages of emulsion, varying types of brine, and under varying bottom hole and top hole conditions. This background of experience has been formed by pioneering and developing Petreco processing throughout the oil fields of Canada, United States and South America.

These are the things you get that the contract doesn't cover.

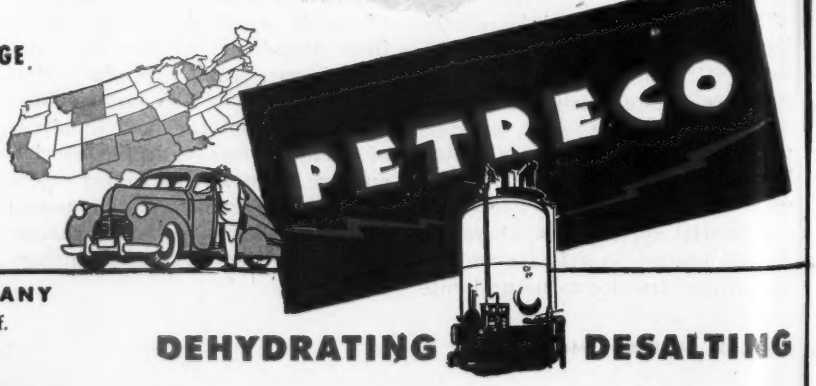
LOOK AT IT THIS WAY: Petreco gives you Field Testing. We are not merely satisfied to bring samples of your oil into our plant for tests, but actually run the oil through a miniature unit, right on the job where we can discuss the thing with you on the derrick floor.

LOOK AT IT THIS WAY: The Petreco Research Division is continually analyzing, checking, and experimenting to best fit the Petreco process to your particular situation. Changes in procedures to meet the characteristics of your crude are a common occurrence.



COMPLETE U. S. OIL STATE COVERAGE WITH PETRECO PROCESSES

Resident field engineers are located in refining and producing centers wherever Petreco processes are in use. These men are specialists, and are always available to assure maximum operating efficiency, and to give helpful advice and assistance on any problem of dehydration or desalting.



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5121 So. Wayside Dr., Houston 1, Texas
648 Edison Building, Toledo 4, Ohio

Representatives in principal production and refining centers

DEHYDRATING DESALTING

Universal Oil Products Announce Rate Reduction

Universal Oil Products Company has announced, effective November 1, 1944, the third reduction of royalty rates in its history. The royalty rate for U.O.P. thermal cracking will be three cents instead of the previous five cents per barrel.

In 1922, when the first U.O.P. cracking unit was installed the royalty rate was fixed at 15 cents per barrel throughput and a yield of 21 per cent of gasoline was guaranteed.

By 1934, despite the enormous increases in yield and quality of products the royalty was lowered one-third or to 10 cents per barrel. Again in 1938—just four years later, the process was still further improved and again the royalty was cut; this time in half, or to five cents per barrel.

From 1922 to 1944 the yield of gasoline has been increased from 21 per cent to over 60 per cent on a comparable charging stock, services to licensees have expanded, while the royalty rate has been reduced from 15 cents to 3 cents a barrel—an 80 per cent reduction.

This represents three times the original yield of gasoline, while the reduction in royalty has been to one-fiith of its initial rate.

Universal will give more service and will continue to give broad patent protection.

Pape Elected V. P. of W-K-M Co.

W-K-M Company, Inc., manufacturers of the Through-Conduit Lubricated Gate Valve, announce the appointment of Howard Pape as Vice President, to be located at the headquarters, Houston, Texas.

Howard Pape has a long history of association with the oil industry, having joined the Tide Water Associated Company in 1915 and a year later becoming associated with Cosden & Company (now Mid-Continent Petroleum Corporation) at Tulsa.

After ten years of service as Chief Engineer and Mechanical Superintendent, he entered the service of Crane Company for the promotion of sales to the oil industry, part of the time being located in New York City and from 1930 to 1935 in the Southwestern states; became intimately known to the oil industry in that location. In 1935 he was transferred to the headquarters in Chicago as Manager of their Valve and Fitting Department. His long history of association with the oil industry's valve problems make him a substantial asset to W-K-M Co.

SECURITY HOLDS SALES CONFERENCE

Twenty-six salesmen and eight servicemen attended the Security Engineering Company's five day sales conference which was held recently at the company's plant in Whittier, California. Several new products were demonstrated to the group. Left to right: bottom row—Jim Thompson, Centralia, Ill.; Karl Clark, Bakersfield; Hal Bentson, Chief Draftsman; Bob Gollum, New York; Gordon (Mike) Newell, Order Dept.; Russell Smith, Odessa, Tex.; Knight Templeton, Whittier. Middle row: Percy Ellis, Coalinga; C. F. (Cy) Johnson, Manager Valve Dept.; L. G. (Pat) Robinson, California Sales Mgr.; O. Hammer, Vice President; R. M. (Bob) Cook, General Sales Mgr.; Ken H. Swart, Chief Engineer; Floyd Wells, Whittier. Top row: Cliff Lowe, Whittier; Sam Gilliard, Ventura; Roy Tucker, Dallas, Tex.; Clifford Ford, Whittier; Cal Shugert, Houston, Tex.; Jim Campbell, Casper, Wyo.; T. H. Stancliff, Engineering Dept.; F. A. Parish, Production Manager, Morey Zorgdrager, Houston, Tex.

Ham Bell, production manager for Continental Oil Company, is a proud man these days—he's a grandfather! The winsome little lady pictured above is eight months old Julene Ernst, queen of all she surveys. Ham thought that one of his great thrills was when Continental completed its 15,000 foot hole at Wasco several years back. But one of Julene's smiles puts everything in the background, Ham says. The baby's father is Lt. E. J. Ernst, a pilot in the American Air Force overseas. Lt. Ernst began his career as an Ensign in the U. S. Navy. Before Pearl Harbor he transferred to the Royal Canadian Air Force. Early this year he transferred to the U. S. Air Force as a pilot. Lt. Ernst has been wounded twice in air action over Europe.

White Star Added to General Controls' Army-Navy "E" Flag

Robert P. Patterson, Under Secretary of War, in a congratulatory letter to the men and women of General Controls Co., Glendale, California, announces their winning for the second time this year of the Army-Navy Production Award for "meritorious services on the production front."

The "E" Flag was first awarded General Controls Co. at impressive ceremonies at their headquarters plant last March. General Controls' double victory was earned in producing their hi-g line of electromagnetic controls, used on aircraft for de-icing, cabin-heating, propeller-feathering, wing flap and other important flying functions.

Hi-g controls, being light weight, vibration resistant, and operating in any position regardless of acceleration or change of motion, are also used on locomotives, trucks, tractors, tanks, ships and many other types of mobile equipment.

A. E. Walker, Chairman and President of the National Supply Company, presents a Spang-Chalfant Quarter Century Club service pin to Charles Theil, 69, who has been with the Etna, Pa., pipe mill for 55 years. Mr. Theil holds the distinction of having the longest service record at the oldest operating pipe mill in the United States—founded 1828. The four other veterans pictured all have been with the plant 50 years or longer. They are, left to right, A. D. Jones, Henry Schaefer, H. C. Moeller and Charles Lenhart.

Schuyler to Return to Calif.

We had a letter from John B. (Jack) Schuyler recently. He is located in Denver, Colorado, as Director of Materials for the Petroleum Administration for War. The period of nearly three years that Jack has been away from sunny California has not lessened his desire to return to Los Angeles, though he gives a big hand to the climate and natural beauties of the Rocky Mountain area.

As most of us know, Jack was a very busy man selling oil country tubular goods and other supplies to the producing departments of this State since 1921.

Let me quote part of his letter, as I believe some of you who read this will be interested. It appears that he might have made a sound decision:

"Dear Walter,

It has been some time since writing you and, for that matter, since receiving a letter from you. You have been busy, and so have I. It was March 1st, 1942, that I arrived in Denver to take over this job, and I hope to return to Los Angeles within the next few months.

As Director of Materials for PAW of District No. 4, I have had the opportunity of getting the answers to many questions.

For some time I have been interested in the ever-expanding field of Public and Industrial Relations. That is my aim. I am studying a bit, and my long experience in sales, with the further development obtained on this job, has given me the background and ability to take charge of such a department. That is my plan.

There are oil companies, supply companies, manufacturers and service companies that will need their relations with the public, and their trade, maintained and improved. Competition will be extraordinarily keen as restrictions on materials are released and reconversion progresses. That is where a Public Relations man is needed.

Los Angeles has been my home for many years and it is my intention to return there."

Field Development

Los Angeles Basin

Chatsworth Try Scheduled

Shell Oil Co., Inc., has rig erected for Schonfeld No. 1 near the w¼ corner of sec. 30-2n-16w in the Calabasas area of Los Angeles County. Yet further west and within the county limits A. D. Simons, Agent, is preparing to drill in the southwest quarter of sec. 22-1n-17w of the Calabasas area.

Waterman Canyon Try Goes On Hook

La Jolla Pet. Co. La Jolla No. 1 on sec. 32-15s-3w in the Waterman Canyon area of San Diego County abandoned in basement after reaching a total depth of 3750 ft. Formation in this hole was extremely hard from shallow depth and no showings were reported in any interval.

Amerada Plans Brawley "Cat"

Amerada Pet. Corp. has built derrick for Veysey No. 1 on sec. 9-13s-14e near Brawley, Imperial County. Work will start on this project upon the release of rig and crew from the company's Tar Springs Ranch No. 1 in the Huasna area of San Luis Obispo County.

Del Valle Well Completed

Ohio Oil Co. Vasquez No. 10 on sec. 17-4n-17w completed in the Vasquez and Videgain zones at a total depth of 6126 ft. flowing under wraps through a 12/64 inch bean at a 175 bbl. daily clean rate. In the same section, Standard Oil Co. Sepulveda No. 8 is spot coring and drilling at 4057 ft. On Sec. 15 of the township, R. E. Havenstrite, Opr. Liebhart No. 2 is coring at 7592 ft., while on sec. 16 the Operator's Barnes No. 5 is attempting to kill a blow from shallow gas zones previously encountered in this area after reaching 3515 ft.

Seal Beach Well Flowing

Tide Water Assoc. Oil Co. Bryant No. 2-23 completed at 7750 ft. flowing 605 B/D 30.6 gravity oil and 237 mcf gas with an average water cut of 55%. At last report the operator was running witch to locate the point of entry. Also active in the field are Capital Co., Continental Oil Co., Hellman Estate, Shell Oil Co., Inc., and Standard Oil Co. of Calif.

Century Plans Athens Well

Century Oil Co. has poured foundation for Century-Wright No. 16 east of Broadway and between the Athens-Rosecrans producing areas. The company will soon rig up to seek production comparable to that in the nearby pools.

To the north in the Athens area, Southern Calif. Pet. Corp. Mahler No. 1 is making 73 bbls. per day net 32.8 gravity oil, with cut reported at 48%.

Montebello Deep Try Producing

Union Oil Co. Howard & Smith No. 3, 10,722 ft. deep test of the Montebello field, tested up hole

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Aliso Canyon	Standard Oil Co., Del Aliso	1	29, 3-16	8915	Drilling
	Standard Oil Co., Frew	1-3	29, 3-16	4560	Drilling
	Standard Oil Co., Ward	3-1	27, 3-16	6464	Drilling
Calabasas	Simons, A. B., Well	1	22, 1-17		Location
Castaic	Charter Oil Co., Well	1	18, 5-16		Graded roads
Chatsworth	Shell Oil Co., Schonfeld	1	30, 2-16		Rig
El Segundo	Richfield Oil Corp., Leuzinger	1	8, 3-14	4582	Abandoned
Hasley Canyon	Shell Oil Co., Claiborne	88-4	4, 4-17	5925	Cleaning out
Las Llajas	Standard Oil Co., Brady Est.	2-1	13, 3-17		Redrilling
Montebello	Hilo Oil Co., Lapworth	1	4, 2-11	2415	Drilling
Newhall	Anderson, J. I., Tomato Can	1	11, 3-16		Foundation
	British-Am. & The Texas Co., NLF	1	21, 4-17	7686	Drilling
	Standard Oil Co., N. L. & F.	3-2	19, 4-17	4088	Drilling
No. Covina	The Texas Co., Covina	27-1	7, 1-9		Rigging up
Pico Canyon	Standard Oil Co., Pico C. O.	42	1, 3-17	4320	Drilling
Pomona	Jones, Evert N., Well	1	17, 2-9		Location
Puente	Alleghany Pet. Co., Rowland	1	14, 2-10	1186	Testing
	Hacienda Oil Co., Well	1	27, 2-10		Location
	Hansen, Melvin, Corehole	3	24, 2-10	1900	Idle
San Jose Hills	Ohio Oil Co., Legrand	1	30, 1-9		Grade
	The Texas Co., Garnier	1	35, 1-10	404	Drilling
Rosecrans	Wilshire Oil Co., Central Heights	1	28, 3-13	4535	Drilling
Whittier	Mayo Oil Co., Grey	1	17, 2-11	4974	Pumping
	Imperial County				
Brawley	Amerada Pet. Corp., Veysey	1	9, 13-14		Rig
	Orange County				
Brea Canyon	Selbar Oil Co., Wardman-Comm.	1	3, 3-10		Rig
Buena Park	Gen. Pet. Corp., Heath	2	34, 3-11	8935	Cleaning out
	The Texas Co., Stern	1	1, 4-11	2831	Drilling
E. Coyote	Barnsdall Oil Co., Sunny Hills	2	22, 3-10	6522	Completed
Kraemer	Mid. Cal. Pet. Co., Mid. Pet.,	K-1	24, 3-9	1593	Drilling
	San Bernardino County				
Chino Hills	Chino Hills Oil Co., Kraemer	2	33, 3-28	891	Testing
	San Diego County				
Waterman Cyn.	La Jolla Pet. Co., Well	1	32, 15-3	3750	Abandoned

from bottom to present perforations and recovered in a large measure salt water with a trace of oil. Currently open in the interval 8660-85 ft. the well is flowing approximately 245 bbls. per day of 43 gravity oil, cutting an average 55% and an estimated 2600 mcf daily of gas.

In the old section of the field, Century Oil Co. redrilled Repetto No. 15 to 3590 ft. and at last report was pumping 75 bbls. per day net 24 plus gravity oil with a water cut estimated at 60%. Additional work in this area is C. C. Killingsworth Barry No. 2 which proposes to redrill from the shoe of 10 inch at 2167 ft. Standard continues its operations with two strings at work on the Baldwin lease.

Long Beach Deep Test Relocated

Shell Oil Co., Inc., abandoned its scheduled 12,000 ft. Alamitos No. 48 at the easterly end of the Long Beach field after reaching 5678 ft. and repeatedly losing circulation. Unable to regain circulation after repeated and costly operations the company skidded the rig 24 ft. where Alamitos No. 48-A is currently drilling below 3600 ft. after cementing 18⅝ inch casing at 1002 ft. The company staked location for Stakemiller-Rose No. 1 as a 10,000 ft. test in the southwest corner of the lease.

Anderson Starting Newhall Wildcat

J. I. Anderson, W. O. Anderson and Palmet Inc. have poured foundation for Tomato Can No. 1 on sec. 7-3n-16w at Newhall. On sec. 21-4n-17w the joint British American and Texas Co. test, Newhall Land & Farming No. 1, continues to drill in hard shale at 7686 ft.

San Jose Hills To Be Active

Drilling in the San Jose Hills area near Covina in Los Angeles County will soon reach a new high with three tests currently scheduled. First under way is The Texas Co. Garnier No. 1 which is drilling in the grass roots on sec. 35-1s-10w. On sec. 7-1s-9w Texaco is rigging up for an early start on Covina No. 27-1. The third project scheduled for the area is Ohio Oil Co. Legrande No. 1 on sec. 30-1s-9w.

Whittier Well Now Pumping

Mayo Oil Co. Gray No. 1, on sec. 17-2s-11w near the Whittier townsite, is pumping an average of 25 bbls. daily net oil with a 75% water cut from the interval 3310-3390 ft.

Rosecrans Try Now Drilling

Wilshire Oil Co. is drilling Central Heights No. 1 southwest of the intersection of Olive and Central Ave. approximately 1 mile east of the southerly tip of the Rosecrans field. At last report the well was spot coring below 4500 ft. after cementing 11¾ inch casing at 1201 ft.

Kraemer Area Project Coring

Mid-Cal Pet. Co. Mid-Pet No. K-1, on sec. 24-3s-9w near Atwood in Orange County, is spot coring in gray shale at 1600 ft.

To the north of here on sec. 17-2s-9w, southeast of the town of Pomona, Everet N. Jones is preparing to drill a well near the center of the section.

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San Joaquin Valley

Elks Hills Operations Maintain High Level

Standard Oil Co. development of the United States Naval Petroleum Reserve at Elk Hills, under contract with the U. S. Navy, maintains the high rate of activity promised at the inception of development of this rich reserve. With Standard subcontracting the actual drilling, wells go to the tanks at a rapid rate. Completions remain substantial and are living up to the high promise which field estimates have ever maintained.

Greeley Well Flows on Test

Standard Oil Co Nord Unit No. 2, on sec. 20-29s-26e at Greeley, bottomed at 11,527 ft. in oil sand and cemented 7 inch at 11,430 ft. after a formation test from the setting point to bottom, open four hours, flowed an 864 B/D rate clean 36.5 gravity oil and 1032 mcf of gas. The operator is preparing to test shut off, run liner and complete.

Helm Well Completed

General Pet. Corp. Noble No. 67-5, on sec. 5-17s-18e in the Huron area of the Helm field, bottomed at 8245 ft. and cemented 5½ inch casing at 8243 ft. Gun perforated at intervals from 8076 to 8209 ft. the well completed flowing 220 bbls. of clean 31.6 gravity oil and 105 mcf of gas through a 10/64 inch bean under 750/225 lbs. pressure. The company is rigging up on Noble No. 37-9 on sec. 9, of the same township.

Rio Vista Gas Well Completed

Amerada Pet. Corp. S. & S. J. D. D. No. 4, on sec. 19-4n-3e in the Rio Vista gas field, completed in the gun perforated intervals 4290-4220 and 4170-4270 ft., blew 11,909,000 cubic feet of gas through a ¾ inch bean and shut in under 1476 lbs. equalized pressure.

Two Midway Wells Finished

C. C. M. O. Co. completed Well No. 43-25 on sec. 25-31s-22e at 2425 ft. in the gun perforated interval 1960-90 and 2095-2105 pumping a settled 39 B/D 17 gravity oil, cutting 11%. On sec. 9-32s-23e, the Company's Well 75-9 finished at 2075 ft. pumping 38 bbls. of 16.6 gravity oil, cutting 16%. Development in this shallow producing field continues at its usual moderate but consistent rate.

SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
Fresno County					
Burrel	General Pet. Corp., Burrel	8-6	26, 16-18	7575	Drilling
Cantua	Tide Water Assoc. Oil Co., S. P.	82-15	15, 17-15		Rigging up
Jacalitos	Standard Oil Co., Well	85-17E	17, 21-15	3752	Drilling
Helm	British-Am. Oil Prod., Mahoney	1	6, 17-17		Rigging up
NW Raisin City	Seaboard Oil Co., Seaboard-Pure	5-5	5, 15-17	6477	Testing
SW Raisin City	Superior Oil Co., Hanneman	83-30	30, 15-17	7351	Abandoned
Tranquility	Standard Oil Co., Patterson	74	3, 16-14		Rigging up
	The Texas Co., Calif.-Cotton	36-23	23, 16-15	3949	Drilling
Kern County					
Ant Hill	Amerada Pet. Corp., S. P.	8-15	15, 29-29	4215	Drilling
Canfield Ranch	Shell Oil Co., Inc., KCL-B	45-27	27, 30-26	7646	Drilling
	Tide Water Assoc. Oil Co., KCL	68	15, 30-26		Grade
Devils Den	C.C.M.O. Co., Bates	2	20, 25-19	4421	Drilling
	Hillview Oil Co., Hillview	2	11, 25-18	778	Pumping
Edison	Gen. Pet. Corp., Tarabino	2	5, 29-29		Grade
	Lumpkin-Taylor, Well	1	16, 30-29		Location
	Richfield Oil Corp., Cottonwood-Olcese	1	20, 29-30	1344	Drilling
	Richfield Oil Corp., King	1	31, 30-30	80	Drilling
Fruitvale	General Pet. Corp., KCL	76-29	29, 29-27	6610	Abandoned
	General Pet. Corp., Kernlandia	84-16	16, 29-27	4399	Drilling
Greeley	Western Gulf Oil Co., KCLA	44-22	22, 29-26	474	Drilling
	The Texas Co., KCL	77-32	32, 29-25		Grade
Gould Hills	Union Oil Co., Richardson	34-18	18, 29-21		Grade
Jacalitos	Standard Oil Co., Well	52-17E	17, 21-15	160	Drilling
	Tide Water Assoc. Oil Co., Well	78-16	16, 21-15	3941	Drilling
Kern River	Wilkern Oil Co., Well	1	17, 28-29	862	Plugging
McKittrick	Americal Pet. Corp., Americal	1	2, 30-31	5450	Redrilling
	Standard Oil Co., McPhee	2-1	36, 29-21	6739	Drilling
Lindsey Hills	Standard Oil Co., Notz	1	18, 28-22	3747	Drilling
Lost Hills	Standard Oil Co., Cahn	58	4, 27-21	1777	Drilling
Magunden	Western Gulf Oil Co., Cohn Est.	1	3, 30-28	5641	Drilling
	Gene Reid Drlg. Co., Scott	1	34, 29-25	160	Drilling
McClung	Continental Oil Co., KCL-G	2	4, 30-26	7746	Abandoned
McVan	Butler Bros., Well	2	14, 27-27	1396	Rigging pump
Poso Creek	Beatty & Steel, Well	1	29, 27-28	2345	Abandoned
	Tide Water Assoc. Oil Co., Well	4	33, 27-27	2663	Testing
	Gene Reid Drlg. Co., Winston	1	27, 27-27	3427	Abandoned
	Independent Expl. Co., Conoco	23	33, 27-27	2741	Completed
	Independent Expl. Co., Conoco	32	33, 27-27	1652	Drilling
Round Mt.	Bender Drilling Co., Vedder	14-1	14, 28-28	2660	Idle
	Bender Drilling Co., Vedder	20-1	20, 27-28	1584	Drilling
	Gen. Pet. Corp., Larkins	2	10, 28-28	1400	Drilling
	T. W. A. Oil Co., Olcese	1	27, 28-29	3170	Abandoned
Sheep Springs	Independent Expl. Co., Salt Creek	66	17, 29-21	2380	Bailing
	Rothschild-Bender Oil Ops., Anderson	1	20, 29-21	3059	Testing
	Rothschild-Bender Oil Ops., Sheep Springs	3	17, 29-21	3616	Drilling
Semitropic	Standard Oil Co., Fullerton	1	25, 27-23	13677	Drilling
So. Belridge	Bandini Pet. Co., Bacon	1	27, 28-20	10465	Drilling
	Superior Oil Co., Crocker	1	13, 29-21	4468	Idle
	Superior Oil Co., Moor	1	15, 29-21	2750	Drilling
Strand	Standard Oil Co., Robbins	25-35			Rigging up
	Standard Oil Co., Brittain	61-2	2, 30-26	11009	Sampling
	Standard Oil Co., KCL	23-41	16, 30-26	5648	Drilling
	Superior Oil Co., Houghton	38-35	35, 29-26	9055	Testing
Stockdale	W.G.O. Co., KCL	77-5	5, 30-27	12176	Drilling
Sunset	T. W. A. Co., McBean	86-36	36, 12-23	10125	Drilling
Tejon	Drilling & Prod. Co., O.M.B.	37-33	33, 11-19		Rigging up
	M. Metzenbaum, Well	34-4	34, 11-19		Location
	Reserve Oil and Gas Co., Well	33-7	33, 11-19	2765	Rig pump
Trico	Magee, H.H., Oprr., Amal-Happold	2	15, 25-24	10390	Testing
W. Edison	Richfield Oil Corp., Smith	1	1, 30-28	3542	Drilling
Kings County					
Stratford	So. Calif. Pet. Corp., Socal-Bergman	88-32	32, 19-20	7715	Drilling
San Luis Obispo County					
Midway	Richfield Oil Corp., Temblor Hills	1-1	36, 31-21	6061	Drilling
	Richfield Oil Corp., Temblor Hills	2-1	27, 32-22		Rigging up
	Richfield Oil Corp., Temblor Hills	2-2	27, 32-22	1005	Drilling

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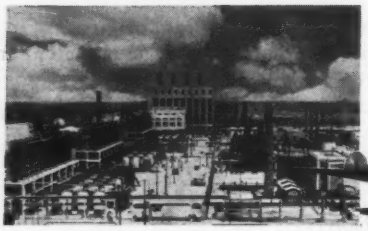

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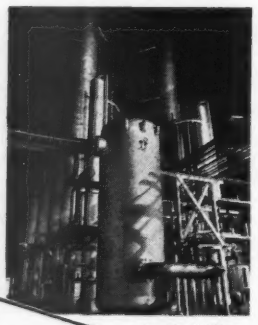

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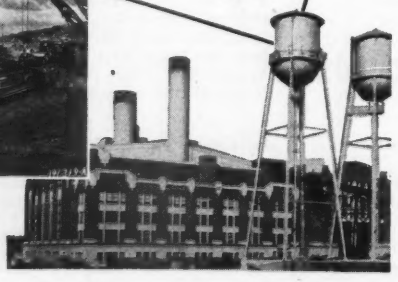

High Pressure Steam and Power

Mount Poso "Cat" Abandoned

Beatty and Steele abandoned its Well No. 1 on sec. 29-27s-28e in the Mt. Poso area of Kern County in gray sand at 2345 ft. One foot of meagrely saturated oil sand was found in the top of the Vedder at 2320 ft. No further drilling has been indicated by this operator.

Marysville Buttes Well Starting

Buttes Oilfields, Inc., is rigging up on Buttes-Ward No. 1 on sec. 2-16n-1e in this gas field of Sutter County. The current project is scheduled to be a deep test and the first of three wells contemplated by the company.

Conoco Starts Northern Wildcat

Continental Oil Co. is rigging up on Conoco-Gulf-Azevedo No. 1 on sec 27-4s-7e in the Westerly area of Stanislaus County. The Company has abandoned its KCL-G-2 in the McClung Area of Kern County. Located on sec. 4-30s-26e, this well bottomed in gray sand at 7746 ft. without having reported showings.

Belridge "Cat" Getting Deep

Bandini Pet. Co. Bacon No. 1, deep test on sec. 27-28s-20e in the South Belridge area of Kern County, is drilling at 10,465 ft. in brown shale. A few oil stains in fine tight sand were cored below 9425 ft.

Shell Oil Plans Elk Grove "Cat"

Shell Oil Co., Inc., is rigging up to drill Elk Grove Comm. No. 1 on sec. 17-7n-6e of Sacramento County. The well is reported projected as a test of gas sands expected at relatively shallow depths.

Buena Vista Wells Remain Good

Completions in the Buena Vista Hills of Kern County remain substantial with Standard Oil Co. putting the last two completions to the tanks. The Company's No. 343-35B finished at plugged depth at 3980 ft., flowing 498 bbls. of clean 29 gravity oil and 165 mcf gas through a 16/64 inch bean, while McNee No. 347 finished at 3513 ft. flowing 439 bbls. of similar production through a 16/64 inch bean.

Coastal and Northern District

Bel-Air Completes Santa Maria Well

Bel-Air Oil Company completed Tonascia No. 3 on sec. 22-10n-34w at 4411 ft. flowing through an 18/64 inch bean at a 165 B/D rate, 16 gravity oil and 3 million cubic ft. of gas daily.

In addition to Bel-Air, operators in this field are Bush-Hancock Oil Co.; Five C Refining Co.; W. R. Gerard; A. N. Macrate; Rothschild Oil Co.; Signal Oil & Gas Co.; and Henry Brown. Macson Oil Co. is scheduled to drill its second well in the field during the month of December.

Huasna Well Drills Ahead

Amerada Pet. Corp. Tar Springs Ranch No. 1, on sec. 25-32s-14e in the Huasna area of San Luis Obispo County, was last reported drilling ahead in brown shale at 2350 ft. This rig will move upon completion to Imperial County to dig the Company's Veysey well near the town of Brawley.

Barnsdall Drilling At Gato Ridge

Barnsdall Oil Co. Pezzoni No. 2 on sec. 15-8n-32w at Gato Ridge is standing with 8⅝ cemented on bottom after reaching 2084 ft. In the same section, the Company's Tognazzini No. 12, deepened to 4,000 ft. and recompleted on the pump for 82 bbls. of clean oil in the initial seven hours. On section 8-8n-32w, The Petrol Corp. Magenheimer No. 616 was last reported in brown shale at 2320 ft.

Bardsdale Well Completed

San Marino Oil Co. Capital-Crude No. 2 on sec. 7-3n-19w in the Bardsdale field of Ventura County, bottomed at 2940 ft., and landed 6⅝ in. liner, including 1501 ft. of perforations at 2792 ft. to complete on the pump for an average daily return of 100 B/D clean oil. On the same section, Wilshire Oil Co. C. E. Dryden No. 1, scheduled deep test of the field, is fishing drill pipe after reaching 5804 ft. Good oil showings were reported in the shallow reaches of the hole with nothing reported to date below 1900 ft.

Elwood Well Rebuilding Rig

Signal Oil & Gas Co. State No. 129-2 on sec. 16-4n-29w, which blew out and burnt after reaching 5250 ft. is rebuilding rig for a barefoot trial of the hole below the shoe of 8⅝ inch casing cemented at 4973 ft. During the conflagration production was estimated at 500 bbls. daily oil and 25 million cubic feet of gas.

Mussels Shoals Project Drilling

Beloil Corp., Ltd. Hickey No. 1, on sec. 7-3n-24w in the Mussels Shoals area west of the Rincon field, is drilling below 500 ft. after cementing surface pipe at 153 ft. This Operator is a co-partner with Lido Pet. and O. C. Field in this exploratory venture on State owned tideland.

Dodge Redrilling Hopper Canyon Well

Dodge, Inc. Signal No. 7, on sec. 13-4n-19w at Hopper Canyon in Ventura County is redrilling at 2637

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
	Santa Barbara County				
Cat Canyon	Union Oil Co., McNee, C. H.	3	20, 9-32	4500	Testing
	Union Oil Co., Santa Maria Realty	1	10, 9-33	4385	Deepening
Foxen Canyon	Four-Five-Six Oil Co., Wickenden	1	34, 9-32		Rigging up
Gato Ridge	Barnsdall Oil Co., Pezzoni 2		15, 8-32	2084	Standing
Gaviota	Standard Oil Co., Hollister	1	35, 5-33		Rig
Lompoc	S. R. Williams, Fickert	1	8, 7-33	3446	Idle
Los Alamos	J. I. Anderson & So. Calif. Pet. Corp., Archambeault	2	3, 7-32	6017	Abandoned
Los Olivos	Hub Oil Co., La Laguna	1	7, 7-30	3580	Redrilling
Purisima	Whittier Assoc., Barham	2	11, 7-32	3726	Testing
	Ventura County				
Camarillo	Barth, D. A., Well	1	32, 2-20	520	Drilling
Ex-Mission	Union Oil Co., Adams	42	19, 4-21	2646	Drilling
Happy Camp	Cal-Camp Oil Corp., Harrington	1	21, 3-19		Grade roads
Hopper Canyon	Dodge, Inc., Signal	7	13, 4-19	2637	Drilling
Ojai	Ellington, L. E., Well	1	8, 4-21	955	Drilling
Oxnard	Lloyd Corp., Ltd., Todd	A-1	6, 1-22	2850	Drilling
Santa Paula	Standard Oil Co., Santa Paula	1	10, 4-20		Grading roads
Sespe	Assoc. Pip. & Eng. Co., A.P.&E. Co.	1	5, 5-19	85	Drilling
	Volunteer Pet. Co., Tar Creek	3	28, 5-19	2373	Bailing
	Merchants Pet. Co., Well	9	1, 4-20	365	Drilling
South Mt.	Los Nietos Co., L.B.H.	1	22, 3-21	3982	Drilling
	Wilshire Oil Co., Petit	2	16, 3-20		Rig
Timber Canyon	Hickey Noble J., Temple	1	22, 4-21	775	Idle
	San Luis Obispo County				
Arroyo Grande	McDuffie, Wm. C. Adams	1	31, 31-13	3832	Pumping
	McDuffie, Wm. C. Dollie	3	6, 32-13	2288	Idle
Tar Springs	Amerada Pet. Corp., Tar Springs	1	25, 31-14	2350	Drilling

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Contra Costa	Shell Oil Co., East Bay	1	13, 1n-3w		Rigging up
Colusa	Standard Oil Co., Davis	1	36, 18n-2w		Location
Contra Costa	Shell Oil Co., Inc., Jacuzzi	1	34, 2n-2e		Location
Glenn	Standard Oil Co., Torres	1	12, 18n-2w	4294	Drilling
Monterey	General Pet. Corp., Vierra	1	7, 13s-2e		Rigging up
Sacramento	Shell Oil Co., Elk Grove	1	17, 7n-6e		Rigging up
San Benito	Panoche Pet. Co., Panoche	1	24, 16s-10e	843	Idle
Solano	Amerada Pet. Corp., Sorensen	1	19, 6n-3e	6504	Abandoned
	Oberholtz, A. Lambie	1	22, 4n-1e	2170	Drilling
	Shell Oil Co., Lambie	1	25, 4n-1w	2617	Stdg. plug.
	Shell Oil Co., Lambie	1A	25, 4n-1w		Cellar
	Standard Oil Co., Suisun	4	5, 3n-1w	4825	Drilling
	Standard Oil Co., Suisun	5	31, 4n-1w	2616	Drilling
	Standard Oil Co., Fontana	1	23, 3n-1w	7944	Drilling
	Standard Oil Co., Fontana	2	32, 4n-1w	3912	Drilling
	Standard Oil Co., Fontana	3	9, 3n-1w		Foundation
Stanislaus	Continental Oil Co., Azevedo	1	27, 4s-7e		Rigging up
Sutter	Buttes Oilfields, Inc., Buttes-Ward	1	2, 15n-1e		Rigging up
Tehama	Superior Oil Co., Saldubehere	1	12, 24s-3w	9225	Testing
	The Texas Co., Jelly-Bend	18-8	8, 29n-2w	6511	Drilling
Yolo	The Texas Co., Winchester	8-1	4, 6n-4e		Location

ft. after milling out of the 6⅝-inch at 2250 ft. The well proposes to test to the 5,000 ft. level.

South Mountain Outpost Coring

Los Nietos Co. No. LBH No. 1, sec. 22-3n-21w, is coring gray sand and shale at 3982 ft. after coring oil shows in the interval 2741-51 ft. In the field, British-American Oil Producing Co. has rig up for Richardson Rancho No. 1 on sec. 13-3n-21w. In this same section, Pac. Western Oil Corp. completed Yale-Richardson No. 2 at 4215 ft., pumping 152 B/D net oil with a 19% cut and is rigging up on No. 3 while foundation has been poured for No. 4.

F. E. Fairfield is rigging up on South Mt. No. 2 in sec. 19-3n-20w where he recently effected solid production on a deepening job of the old South Mountain Oil Co.'s Well No. 1.

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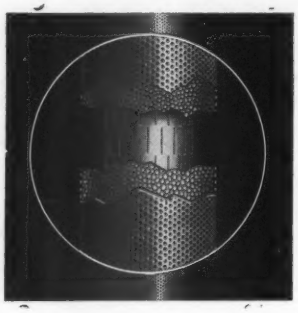
SIZE FOR SIZE, a Pacific Pre-Packed Gravel Liner has **more actual open area** per square inch than wire screen. This means that, in addition to the greater strength of its sheet steel construction, a Pacific has **more** drainage area to insure maximum oil recovery!

Wherever sand is a problem, Pacific-equipped wells are operating efficiently year after year without sanding up pumps, rods, tubing and other costly production equipment. Moreover, Pacific Liners are proving the efficient solution to installation problems because of their stronger construction, easier, safer installation and maintenance of uniform gravel pack.



Pacific Liners are made for all well requirements, and to your specifications if desired. Screens of wrought iron, Armco ingot iron or steel are available. ASK FOR DESCRIPTIVE BULLETIN!

PACIFIC

PACIFIC PERFORATING CO., TORRANCE, CALIFORNIA, PHONE TORRANCE 500

Foxen Canyon Test Rigging Up

Four-Five-Six Oil Company is rigging up on Wickenden No. 1 in the Foxen Canyon Area near Cat Canyon in Santa Barbara County. Located on sec. 34-9s-32w, the well is situated 7215 ft. northerly and 665 ft. easterly from the southwest corner of Rancho Tinaquic.

Oxnard Try Now Drilling

Lloyd Corp., Ltd., Todd No. A-1, on sec. 6-1n-22w, at Oxnard in Ventura County, is drilling at 2850 ft. after cementing 13⅜ inch casing at 1000 ft. The well is expected to prospect below the normal heavy oil zones produced in the area.

Los Alamos Try Abandoned

J. I. Anderson and So. Calif. Pet. Corp. Archambeault No. 2 on sec. 3-7n-32w in the Los Alamos Area of Santa Barbara county is abandoned at 6017 ft. Some oil shows were encountered but were considered unworthy of testing.

Second Goleta Well Drilling

Pac. Lighting Corp. is drilling Miller No. 2 at 1640 ft. in sec. 20-4n-28w on Mascalitan Island at Goleta. The well immediately follows project No. 1 which completed at 4510 ft. flowing 160 million cubic feet daily of gas.

San Miguelito Well Finished

Continental Oil Co. completed Grubb No. 33-2 at 8235 ft. flowing 3251 B/D 30 gravity clean oil and 2889 mcf of gas through a 1 inch bean. Settled production through a 14/64 inch bean was 794 B/D, 32.6 gravity, 0.2% and 459 mcf gas under 1250/1900 lbs. pressure. The company's Grubb No. 34-2 landed pipe on bottom at 7828 ft. and is testing by stages.

BUY WAR BONDS

Smooth, even power... hydraulic drive

Bethlehem S-50 Hoist

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S *means* Service, Simplicity, Speed, Smoothness

Smooth, even flow of power . . . plus torque multiplication . . . plus high speed. These are some of the leading reasons for the S-50's outstanding performance records on deep-well rotary workover jobs and on deep-well rod and tubing servicing.

Bethlehem's S-50 has all these features combined in one unit:

- Hydraulic drive
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- Air and mechanical clutch-shifting
- Centralized controls
- All roller bearings
- Low horizontal table drive
- Rugged frame and skids
- Complete assembly, ready for field connections
- Portability—can be moved as a unit

Get Loose Junk Quick with a COOPER DIE-FORMED BASKET

Get cones or other junk too large for ordinary baskets—and get it **all** in one grab! The special Cooper die-forming principle makes this the fastest, easiest-operating, most efficient tool of its kind. No need to circulate, rotate or make hole to pick up junk, though bridges can be drilled when encountered. The steel fingers scrape bottom as they close, catching and retaining both big and little objects. Does the job in less than 3 minutes on bottom.

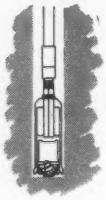
POSITIVE OPERATION AT ANY DEPTH!

RUN TO BOTTOM

Attach the Cooper Die Formed Basket to the drill pipe and run it to bottom. No need to circulate, rotate or to make hole.

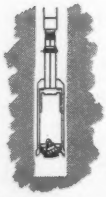
APPLY WEIGHT

Pressure shears the four pins which prevent fingers from closing prematurely, forces the fingers through the die inside the shoe.



STEEL FINGERS SCRAPE BOTTOM

The steel strips curve and interlock as they are driven through the die, forming a tight basket that picks up and retains both big and little junk.



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Jacalitos Outpost Completed

Standard Oil Co. Well No. 85-17E in the Jacalitos Area of Fresno County completed at plugged depth of 3805 ft., flowing from 213 ft. of formation at a 400 B/D rate. Second day's production on a 16 hour gauge was 274 bbls. of clean 33.9 gravity oil through a 32/64 inch bean. The Company has spudded No. 52-17E in the same section and has located No. 61 on sec. 21 of the township. On section 25, the Company's 8-25E is drilling at 3261 ft., while on sec. 35, No. 83-35E completed in Temblor oil sand from 4497 to 4554 ft., pumping 49 B/D 38.7 gravity clean oil. Wilshire-Annex Oil Co. has erected rig for Well No. 25-22E in the same field area.

Trico Wildcat Remains Enigma

H. H. Magee, Operator Amalgamated-Happold No. 2 on sec. 15-25s-24e, south of the Trico field in Kern County, remains a strictly "restricted" well. This operator has maintained strict secrecy concerning depth and formation. Reliable field reports, however, indicate that oil showings were found above bottom 10,390 ft. where 7 inch pipe is cemented for gun perforation and trial.

Tranquillity Area Test Rigging

Standard Oil Co. is rigging up Paterson No. 74 in sec. 3-16s-14e of Fresno County. On sec. 23-16s-15e, The Texas Co. California-Cotton No. 36-23 is drilling at 3949 ft. after cementing 11¾ inch casing at 613 ft. To the south, in the Cantua Creek area, Tide Water Associated Oil Co. is rigging up to drill SP-No. 82-15 on sec. 15-17s-15e.

OIL AND MINING

The entire assets of holding company, consisting of landowners and overriding royalty in 12 oil wells located on Signal Hill and Huntington Beach. Miscellaneous drilling machinery, derricks, lots on Signal Hill and Huntington Beach, also 64 acres of potential oil land located at Arroyo Grande. For further information contact Edgar C. Burge, First National Bank Bldg., Long Beach, California, or phone LB 63988. 12/20b

For a complete weekly report on California drilling wells read CALIFORNIA OIL WORLD NEWS SERVICE. Continously carried locations, elevations, spud dates, etc. affords an immediate summary of EVERY well EACH week.

BARRIERS TO PRODUCTION

Wax, scale, and other deposits can be quickly and economically removed from wells, flow lines, tank bottoms, etc., by NOBS SOLVENTS.

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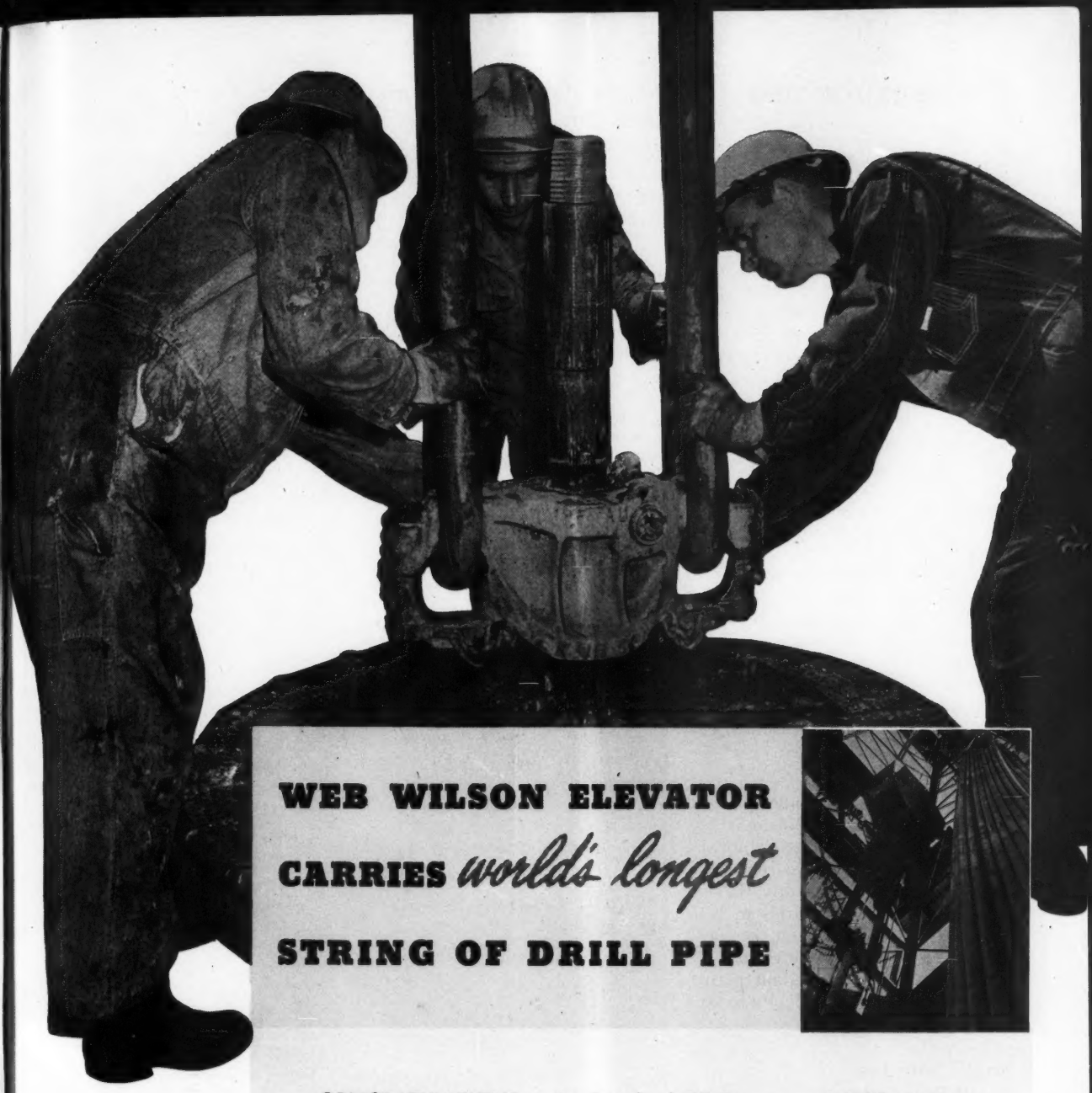

WEB WILSON ELEVATOR CARRIES *world's longest* STRING OF DRILL PIPE

CONGRATULATIONS to the Standard Oil Company of California on the perfected drilling technique responsible for attaining the world's record depth.

WEB WILSON, the designer of the FIRST elevator to handle upset drill pipe, supplied the elevator that today carries the world's longest string of drill pipe.

WEB WILSON PRODUCTS: Elevators for Collar and External Upset Drill Pipe and Tubing; Rotary and Casing Tongs, Tong Pins, Tong Dies; 100-Ton and 500-Ton Connectors.

WEB WILSON Oil Tools

WEB WILSON OIL TOOLS
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HUNTINGTON PARK, CALIFORNIA

CARRINGTON KING

(Continued from Page 3)

sion of American air transport into international fields was made by Standard Oil Co. (N. J.) before the Civil Aeronautics Board, Oct. 30.

"As the world progresses, as new oil sources are opened up, as competition continues to increase, the oil industry's need for international air transport to every corner of the earth will inevitably grow," Orville Harden, vice-president and director of the company, told the CAB.

Appearing as a sort of amicus curiae at hearings in which America's leading airlines are applying for postwar overseas routes and services, the oil company executive told the board the country's best interest "will be served by an extensive American network of world air lines reaching to all corners of the globe". Petroleum products not only are vital to the expanding air services, he pointed out, but air transport has repaid the industry by saving it months of construction in far-off countries by flying in critical refinery and other equipment.

Californians will be interested to learn that Miss Bettye Bohanon, executive secretary to the California Conservation Committee from 1930 to 1941 and, more recently, petroleum products and priorities analyst for PAW in Washington, is leaving for Lima, Peru, where she will be the first woman assistant petroleum attache to the U. S. Embassy.

South Belridge Work Proceeds

Belridge Oil Co. and General Pet. Corp. continue their respective development programs in the South Belridge field. This field produces substantial quantities of heavy oil at shallow depths and has long been contributing to California reserves.

Camarillo "Cat" Fishing

D. A. Barth, Well No. 1, on sec. 32-2n-20w, in the Camarillo area of Ventura County is fishing bit after reaching 520 ft. This well is located on the old Rancho Calleguas.

MacDonald, Burns & Norris Make Gas Discovery

A duo of veteran California oil operators, in company with a Los Angeles Basin industrialist, has discovered a new gas accumulation on the flank of the Elk Hills field. The discoverers, A. A. MacDonald, E. Robert Burns and K. T. Norris, drilled Flickenger No. 1 in the northeast corner of sec. 36-30s-22e to a total depth of 5147 ft. in shale. The project spot cored and checked adjacent field producing horizons to adequately determine the well's structural position. After core analysis of the sand interval 4986-5054 ft. a 7 inch combination string was landed at 5054 ft. and cp'd over the zone at 4981 ft. With 2½ inch tubing at 5010 ft., and a packer at 4940 ft. the well was completed flowing through a 50/64 inch bean at a 16,750,000 cubic ft. per day rate of gas under 1500 lbs. flow pressure. With the bean at 24/64 inches the well currently averages 50 bbls. daily of 62 gravity condensate and 5,000,000 cubic ft. of gas.

The Elk Hills structure, most of which is in the Naval Reserve, is well known but the importance of this discovery is in its indication that similar flanking sands may be found in other locations. It is presumed that further down structure, away from the gas cap, a black oil sand will be uncovered.

The current operators are credited with the discovery, the magnitude of which will not be entirely clear until subsequent drilling has more completely delineated the subsurface picture. This amalgamation of operators has demonstrated its intention to participate intensively in California wildcat drilling and has several projects under consideration. The operators are currently devoting their attention to a wildcat play in the Russell field, New Mexico.

MacDonald, Burns & Norris Flickenger No. 1

Ojai Area Well Drilling

L. E. Ellington Victory No. 1 on sec. 8-4n-21w is drilling at 955 ft. after successfully regaining circulation lost near the 600 ft. level. Operations were temporarily delayed while water lines were laid to the drilling site.

Montebello Area Wildcat Spot Coring

Ohio Oil Co. Bishop-Hilo-Lap worth No. 1, on sec. 4-2s-11w eas of the Montebello field, is spot cor ing hard shale at 2415 ft. The wel is protected with 13⅜ inch surfac casing cemented at 600 ft.